

SEQUENCE LISTING

<110> Cohen, Dalia et al.

<120> Identification of Genes Involved in
Alzheimer's Disease Using Drosophila Melanogaster

<130> 4-31612 A

<150> 60/236,893
<151> 2000-09-29

<150> 60/298,309
<151> 2001-06-14

<160> 53

<170> FastSEQ for Windows Version 4.0

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<211> 123
<212> DNA
<213> Homo Sapien

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gcagaagatg tgggttcaaa caaagggtgca atcattggac tcatgggtggg cggtgttgc 120
tag 123

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<212> DNA
<213> Homo Sapien

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gcagaagatg tgggttcaaa caaagggtgca atcattggac tcatgggtggg cggtgttgc 120
atagcgttag 129

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<211> 300
<212> DNA
<213> Homo Sapien

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atagcgtacag tgatcgatcaccttggtg atgctgaaga agaaacagta cacatccatt 180
catcatggtg tggtgaggt tgacgcccgt gtcaccccg aggagcgcca cctgtccaag 240
atgcagcaga acggctacga aaatccaacc tacaagttct ttgagcagat gcagaactag 300

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<211> 300
<212> DNA
<213> Homo Sapien

<400> 4

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atagcgacag tgcgtatcat caccttggtg atgctgaaga agaaacagta cacatccatt	180
catcatggtg tgggtggaggt tgacgcgcgt gtcaccccaag aggagcgccta cctgtccaaag	240
atgcagcaga acggctacga aaatccaaacc tacaaggttct ttgagcagat gcagaacta	300

<210> 5

<211> 72

<212> DNA

<213> Homo Sapien

<400> 5

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<210> 6

<211> 1537

<212> DNA

<213> Homo Sapien

<400> 6

<210> 7

<211> 332

<212> PRT
<213> Homo Sapien

<400> 7
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Ile Thr Ala Gly Ala Arg Pro Thr Ser Tyr Gly Arg Val Gly Cys Glu
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Gly Asp Val Arg Leu Ser Pro Val Ser Pro Leu Leu Ala Pro Pro Asp
35 40 45
Pro Arg Leu Ala Ser Arg Trp Glu Gly Arg Ser Arg Met Lys Gly Lys
50 55 60
Lys Gly Ile Val Ala Ala Ser Gly Ser Glu Thr Glu Asp Glu Asp Ser
65 70 75 80
Met Asp Ile Pro Leu Asp Leu Ser Ser Ala Gly Ser Gly Lys Arg
85 90 95
Arg Arg Arg Gly Asn Leu Pro Lys Glu Ser Val Gln Ile Leu Arg Asp
100 105 110
Trp Leu Tyr Glu His Arg Tyr Asn Ala Tyr Pro Ser Glu Gln Glu Lys
115 120 125
Ala Leu Leu Ser Gln Gln Thr His Leu Ser Thr Leu Gln Val Cys Asn
130 135 140
Trp Phe Ile Asn Ala Arg Arg Arg Leu Leu Pro Asp Met Leu Arg Lys
145 150 155 160
Asp Gly Lys Asp Pro Asn Gln Phe Thr Ile Ser Arg Arg Gly Ala Lys
165 170 175
Ile Ser Glu Thr Ser Ser Val Glu Ser Val Met Gly Ile Lys Asn Phe
180 185 190
Met Pro Ala Leu Glu Glu Thr Pro Phe His Ser Cys Thr Ala Gly Pro
195 200 205
Asn Pro Thr Leu Gly Arg Pro Leu Ser Pro Lys Pro Ser Ser Pro Gly
210 215 220
Ser Val Leu Ala Arg Pro Ser Val Ile Cys His Thr Thr Val Thr Ala
225 230 235 240
Leu Lys Asp Val Pro Phe Ser Leu Cys Gln Ser Val Gly Val Gly Gln
245 250 255
Asn Thr Asp Ile Gln Gln Ile Ala Ala Lys Asn Phe Thr Asp Thr Ser
260 265 270
Leu Met Tyr Pro Glu Asp Thr Cys Lys Ser Gly Pro Ser Thr Asn Thr
275 280 285
Gln Ser Gly Leu Phe Asn Thr Pro Pro Pro Thr Pro Pro Asp Leu Asn
290 295 300
Gln Asp Phe Ser Gly Phe Gln Leu Leu Val Asp Val Ala Leu Lys Arg
305 310 315 320
Ala Ala Glu Met Glu Leu Gln Ala Lys Leu Thr Ala
325 330

<210> 8
<211> 1053
<212> DNA
<213> Homo Sapien

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agtgcgtgtgc gcaaccacac ttaccagatg ttgacactgc tggcagagga ccgtgcagtt

60
120

ccctcgcccc	ccacaggccc	tgggcccc	ctggagttt	ctctgcacga	ggatctgtg	180
acccgtgtgt	tgacatggca	gctgcaatgg	gatgagctt	gggatgggt	cgaggaacgg	240
cgggctgagc	aactgaaact	atttgaatag	ctagtgagcg	aagctcgc	ccactgtt	300
cggcatggtc	cagttcgtga	ggctctgctc	accctgctgg	atgcctgtgg	ccgcctgtg	360
cccagttagcc	cagcactgg	tgaaggctt	gtgctactt	tcagccagct	gtgtgtttgt	420
gtggcccaagg	agcattcatt	gctcgagtt	ttccctgcagc	caccccttga	gcctggagcc	480
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ggccagcagg	cccggtatgc	cctacttctt	ctcatggctt	tgtcagctgg	gagccccact	600
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gccctgtact	catcaactg	tcgaaagatt	gaggttccag	gggatgattt	gcactgtctg	720
cgacgggaag	actggctgg	agtgcaccc	cttgcactt	tcatgagtt	cctggagtt	780
tgcaatgcag	taattcagg	ggctcaccc	ctgggtcaga	agcagttgg	tgattatatc	840
cataatgggt	tcctgggt	tgtcatgg	cctgccttgc	acaagaccc	tgtggaggag	900
atgatcgcca	gtaccgccta	cctggactt	ttcctacgga	gtatctcaga	gcctgtt	960
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accctcg	tctgtattgg	cagtaactcc	cgg			1053

<210> 9
<211> 351
<212> PRT
<213> Homo Sapien

<400> 9
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 35 40 45
 Pro Leu Leu Glu Phe Ala Leu His Glu Asp Leu Leu Thr Arg Val Leu
 50 55 60
 Thr Trp Gln Leu Gln Trp Asp Glu Leu Gly Asp Gly Val Glu Glu Arg
 65 70 75 80
 Arg Ala Glu Gln Leu Lys Leu Phe Glu Met Leu Val Ser Glu Ala Arg
 85 90 95
 Gln Pro Leu Leu Arg His Gly Pro Val Arg Glu Ala Leu Leu Thr Leu
 100 105 110
 Leu Asp Ala Cys Gly Arg Pro Val Pro Ser Ser Pro Ala Leu Asp Glu
 115 120 125
 Gly Leu Val Leu Leu Leu Ser Gln Leu Cys Val Cys Val Ala Gln Glu
 130 135 140
 Pro Ser Leu Leu Glu Phe Phe Leu Gln Pro Pro Pro Glu Pro Gly Ala
 145 150 155 160
 Ala Pro Arg Leu Leu Phe Ser Arg Leu Val Pro Phe Val His Arg
 165 170 175
 Glu Gly Thr Leu Gly Gln Gln Ala Arg Asp Ala Leu Leu Leu Met
 180 185 190
 Ala Leu Ser Ala Gly Ser Pro Thr Val Gly Arg Tyr Ile Ala Asp His
 195 200 205
 Ser Tyr Phe Cys Pro Val Leu Ala Thr Gly Leu Ser Ala Leu Tyr Ser
 210 215 220
 Ser Leu Pro Arg Lys Ile Glu Val Pro Gly Asp Asp Trp His Cys Leu
 225 230 235 240
 Arg Arg Glu Asp Trp Leu Gly Val Pro Ala Leu Ala Leu Phe Met Ser
 245 250 255

Ser Leu Glu Phe Cys Asn Ala Val Ile Gln Val Ala His Pro Leu Val
 260 265 270
 Gln Lys Gln Leu Val Asp Tyr Ile His Asn Gly Phe Leu Val Pro Val
 275 280 285
 Met Gly Pro Ala Leu His Lys Thr Ser Val Glu Glu Met Ile Ala Ser
 290 295 300
 Thr Ala Tyr Leu Glu Leu Phe Leu Arg Ser Ile Ser Glu Pro Ala Leu
 305 310 315 320
 Leu Arg Thr Phe Leu Arg Phe Leu Leu His Arg His Asp Thr His
 325 330 335
 Thr Ile Leu Asp Thr Leu Val Ala Arg Ile Gly Ser Asn Ser Arg
 340 345 350

<210> 10
 <211> 1425
 <212> DNA
 <213> Homo Sapien

<400> 10

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ggcccacact	gatccgcac	cctcttcatc	gagtccaaacc	tggacgcagg	atcctgaacc	180
tactgagggg	atggagagaa	ccagcagagc	tcccaagtt	gggggccccca	tcccctgggg	240
acaagcccat	cttcgtacct	ctctcgaact	acagggatgt	gcagtatttt	gggaaattg	300
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atcccaaagc	ctctagctcc	ttccaggcca	atggaccaa	gtttgccatt	caatatggaa	480
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ttgatggat	attgggcctc	gttttccca	ttctgtctgt	gaaaggagtt	cggcccccgaa	660
tggatgtact	ggtggagcag	gggctattgg	ataagctgt	cttctcctt	tacctaaca	720
gggaccctga	agagcctgat	ggaggagagc	ttgtcttggg	gggctcgac	ccggcacact	780
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ccgtcttcga	ccgcggggac	atgaagagca	gcgcggggt	gggcctggcg	cgcgctcgca	1260
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<210> 11
 <211> 433
 <212> PRT
 <213> Homo Sapien

<400> 11

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20	25	30														
Glu	Pro	Ser	Gly	Ala	Thr	Leu	Ile	Arg	Ile	Pro	Leu	His	Arg	Val	Gln	

35	40	45													
Pro	Gly	Arg	Arg	Ile	Leu	Asn	Leu	Leu	Arg	Gly	Trp	Arg	Glu	Pro	Ala
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Glu	Leu	Pro	Lys	Leu	Gly	Ala	Pro	Ser	Pro	Gly	Asp	Lys	Pro	Ile	Phe
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Val	Pro	Leu	Ser	Asn	Tyr	Arg	Asp	Val	Gln	Tyr	Phe	Gly	Ile	Gly	
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Ser	Asn	Leu	Trp	Val	Pro	Ser	Arg	Arg	Cys	His	Phe	Phe	Ser	Val	Pro
							115		120			125			
Cys	Trp	Leu	His	His	Arg	Phe	Asp	Pro	Lys	Ala	Ser	Ser	Ser	Phe	Gln
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Ala	Asn	Gly	Thr	Lys	Phe	Ala	Ile	Gln	Tyr	Gly	Thr	Gly	Arg	Val	Asp
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Gly	Ile	Leu	Ser	Glu	Asp	Lys	Leu	Thr	Ile	Gly	Gly	Ile	Lys	Gly	Ala
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Ser	Val	Ile	Phe	Gly	Glu	Ala	Leu	Trp	Glu	Pro	Ser	Leu	Val	Phe	Ala
							180		185			190			
Phe	Ala	His	Phe	Asp	Gly	Ile	Leu	Gly	Leu	Gly	Phe	Pro	Ile	Leu	Ser
							195		200			205			
Val	Glu	Gly	Val	Arg	Pro	Pro	Met	Asp	Val	Leu	Val	Glu	Gln	Gly	Leu
							210		215			220			
Leu	Asp	Lys	Pro	Val	Phe	Ser	Phe	Tyr	Leu	Asn	Arg	Asp	Pro	Glu	Glu
225							230			235			240		
Pro	Asp	Gly	Gly	Glu	Leu	Val	Leu	Gly	Gly	Ser	Asp	Pro	Ala	His	Tyr
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Ile	Pro	Pro	Leu	Thr	Phe	Val	Pro	Val	Thr	Val	Pro	Ala	Tyr	Trp	Gln
							260		265			270			
Ile	His	Met	Glu	Arg	Val	Lys	Val	Gly	Pro	Gly	Leu	Thr	Leu	Cys	Ala
							275		280			285			
Lys	Gly	Cys	Ala	Ala	Ile	Leu	Asp	Thr	Gly	Thr	Ser	Leu	Ile	Thr	Gly
							290		295			300			
Pro	Thr	Glu	Glu	Ile	Arg	Ala	Leu	His	Ala	Ala	Ile	Gly	Gly	Ile	Pro
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Leu	Leu	Ala	Gly	Glu	Tyr	Ile	Ile	Leu	Cys	Ser	Glu	Ile	Pro	Lys	Leu
							325		330			335			
Pro	Ala	Val	Ser	Phe	Leu	Leu	Gly	Gly	Val	Trp	Phe	Asn	Leu	Thr	Ala
							340		345			350			
His	Asp	Tyr	Val	Ile	Gln	Thr	Thr	Arg	Asn	Gly	Val	Arg	Leu	Cys	Leu
							355		360			365			
Ser	Gly	Phe	Gln	Ala	Leu	Asp	Val	Pro	Pro	Ala	Gly	Pro	Phe	Trp	
							370		375			380			
Ile	Leu	Gly	Asp	Val	Phe	Leu	Gly	Thr	Tyr	Val	Ala	Val	Phe	Asp	Arg
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Gly	Asp	Met	Lys	Ser	Ser	Ala	Arg	Val	Gly	Leu	Ala	Arg	Ala	Arg	Thr
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Gly															

<210> 12
 <211> 1242
 <212> DNA

<213> Homo Sapien

<400> 12

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cgccctggaaag aggaggaggc agcggcagag aaggaggacc gcgggcggcc ctacacactg 240
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gatcggccca cccggccagg ccacggctcc tttgtcaact gtggcatgaa aaaggaggtg 660
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caccaggact gcaagaccta ccatggcaaa gtggtatcat cgcaggacc tcgcaccaaa 780
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acctgaaagt tctaaggggc cgaggacatc agtgaagcag cagtgaaacc aggggctctg 1200
caggtcaactt gggacggacg ccaccagact tgtctccaaa aa 1242

<210> 13

<211> 381

<212> PRT

<213> Homo Sapien

<400> 13

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							20			25			30		
Lys	Lys	Glu	Glu	Lys	Lys	Trp	Lys	Asp	Leu	Lys	Leu	Met	Lys	Lys	
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Leu	Glu	Arg	Gln	Arg	Ala	Gln	Glu	Glu	Gln	Ala	Lys	Arg	Leu	Glu	Glu
							50			55			60		
Glu	Glu	Ala	Ala	Ala	Glu	Lys	Glu	Asp	Arg	Gly	Arg	Pro	Tyr	Thr	Leu
							65			70			75		80
Ser	Val	Ala	Leu	Pro	Gly	Ser	Ile	Leu	Asp	Asn	Ala	Gln	Ser	Pro	Glu
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Leu	Arg	.Thr	Tyr	Leu	Ala	Gly	Gln	Ile	Ala	Arg	Ala	Cys	Ala	Ile	Phe
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Cys	Val	Asp	Glu	Ile	Val	Val	Phe	Asp	Glu	Glu	Gly	Gln	Asp	Ala	Lys
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Thr	Val	Glu	Gly	Glu	Phe	Thr	Gly	Val	Gly	Lys	Lys	Gly	Gln	Ala	Cys
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Val	Gln	Leu	Ala	Arg	Ile	Leu	Gln	Tyr	Leu	Glu	Cys	Pro	Gln	Tyr	Leu
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Arg	Lys	Ala	Phe	Phe	Pro	Lys	His	Gln	Asp	Leu	Gln	Phe	Ala	Gly	Leu
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Leu	Asn	Pro	Leu	Asp	Ser	Pro	His	His	Met	Arg	Gln	Asp	Glu	Glu	Ser
							180			185			190		

Glu Phe Arg Glu Gly Ile Val Val Asp Arg Pro Thr Arg Pro Gly His
 195 200 205
 Gly Ser Phe Val Asn Cys Gly Met Lys Lys Glu Val Lys Ile Asp Lys
 210 215 220
 Asn Leu Glu Pro Gly Leu Arg Val Thr Val Arg Leu Asn Gln Gln Gln
 225 230 235 240
 His Pro Asp Cys Lys Thr Tyr His Gly Lys Val Val Ser Ser Gln Asp
 245 250 255
 Pro Arg Thr Lys Ala Gly Leu Tyr Trp Gly Tyr Thr Val Arg Leu Ala
 260 265 270
 Ser Cys Leu Ser Ala Val Phe Ala Glu Ala Pro Phe Gln Asp Gly Tyr
 275 280 285
 Asp Leu Thr Ile Gly Thr Ser Glu Arg Gly Ser Asp Val Ala Ser Ala
 290 295 300
 Gln Leu Pro Asn Phe Arg His Ala Leu Val Val Phe Gly Gly Leu Gln
 305 310 315 320
 Gly Leu Glu Ala Gly Ala Asp Ala Asp Pro Asn Leu Glu Val Ala Glu
 325 330 335
 Pro Ser Val Leu Phe Asp Leu Tyr Val Asn Thr Cys Pro Gly Gln Gly
 340 345 350
 Ser Arg Thr Ile Arg Thr Glu Glu Ala Ile Leu Ile Ser Leu Ala Ala
 355 360 365
 Leu Gln Pro Gly Leu Thr Gln Ala Gly Ala Arg His Thr
 370 375 380

<210> 14

<211> 1779

<212> DNA

<213> Homo Sapien

<400> 14

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gtccccgggg	cgagcgcgca	gccccgagcc	cgccccgccc	ctcccgagc	cctccccccc	180
gtgtctccca	tgcgcgcggg	ctcgcccccg	gcccgcagca	ccaagccttt	tgtcacgc	240
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gcacatgate	cggctctgc	ggctgcggcg	ctgaagtcgg	gatacccgct	gtgttacccc	1260
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<210> 15
<211> 593
<212> PRT
<213> Homo Sapien

<400> 15	
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35 40 45	
Arg Ala Arg Pro Ala Pro Pro Gly Ala Leu Pro Pro Ala Ala Pro Met	
50 55 60	
Arg Ala Gly Ser Ser Pro Ala Gly Ser Thr Lys Pro Phe Val His Ala	
65 70 75 80	
Val Pro Pro Ser Asp Pro Leu Arg Gln Ala Asn Arg Leu Pro Ile Lys	
85 90 95	
Val Leu Lys Met Leu Thr Ala Arg Thr Gly His Ile Leu His Pro Glu	
100 105 110	
Tyr Leu Gln Pro Leu Pro Ser Thr Pro Val Ser Pro Ile Glu Leu Asp	
115 120 125	
Ala Lys Lys Ser Pro Leu Ala Leu Ala Gln Thr Cys Ser Gln Ile	
130 135 140	
Gly Lys Pro Asp Pro Ser Pro Ser Ser Lys Leu Ser Ser Lys Ser Gly	
145 150 155 160	
Phe Arg Val Pro Ser Ala Thr Cys Gln Pro Phe Thr Pro Arg Thr Gly	
165 170 175	
Ser Pro Ser Ser Ala Ser Ala Cys Ser Pro Gly Gly Met Leu Ser	
180 185 190	
Ser Ala Gly Gly Ala Pro Glu Gly Lys Asp Asp Lys Lys Asp Thr Asp	
195 200 205	
Val Gly Gly Gly Lys Gly Thr Gly Gly Ala Ser Ala Glu Gly Gly	
210 215 220	
Pro Thr Gly Leu Ala His Gly Arg Ile Ser Cys Gly Gly Ile Asn	
225 230 235 240	
Val Asp Val Asn Gln His Pro Asp Gly Gly Pro Gly Gly Lys Ala Leu	
245 250 255	
Gly Ser Asp Cys Gly Gly Ser Ser Gly Ser Ser Ser Gly Ser Gly Pro	
260 265 270	
Ser Ala Pro Thr Ser Ser Ser Val Leu Gly Ser Gly Leu Val Ala Pro	
275 280 285	
Val Ser Pro Tyr Lys Pro Gly Gln Thr Val Phe Pro Leu Pro Pro Ala	
290 295 300	
Gly Met Thr Tyr Pro Gly Ser Leu Ala Gly Ala Tyr Ala Gly Tyr Pro	
305 310 315 320	
Pro Gln Phe Leu Pro His Gly Val Ala Leu Asp Pro Thr Lys Pro Gly	
325 330 335	

Ser Leu Val Gly Ala Gln Leu Ala Ala Ala Ala Gly Ser Leu Gly
 340 345 350
 Cys Ser Lys Pro Ala Gly Ser Ser Pro Leu Ala Gly Ala Ser Pro Pro
 355 360 365
 Ser Val Met Thr Ala Ser Leu Cys Arg Asp Pro Tyr Cys Leu Ser Tyr
 370 375 380
 His Cys Ala Ser His Leu Ala Gly Ala Ala Ala Ser Ala Ser Cys
 385 390 395 400
 Ala His Asp Pro Ala Ala Ala Ala Leu Lys Ser Gly Tyr Pro
 405 410 415
 Leu Val Tyr Pro Thr His Pro Leu His Gly Val His Ser Ser Leu Thr
 420 425 430
 Ala Ala Ala Ala Gly Ala Thr Pro Pro Ser Leu Ala Gly His Pro
 435 440 445
 Leu Tyr Pro Tyr Gly Phe Met Leu Pro Asn Asp Pro Leu Pro His Ile
 450 455 460
 Cys Asn Trp Val Ser Ala Asn Gly Pro Cys Asp Lys Arg Phe Ala Thr
 465 470 475 480
 Ser Glu Glu Leu Leu Ser His Leu Arg Thr His Thr Ala Phe Pro Gly
 485 490 495
 Thr Asp Lys Leu Leu Ser Gly Tyr Pro Ser Ser Ser Met Ala Ser
 500 505 510
 Ala Ala Ala Ala Met Ala Cys His Met His Ile Pro Thr Ser Gly
 515 520 525
 Ala Pro Gly Ser Pro Gly Asp Ala Gly Ala Ala Gln Pro Pro Pro Arg
 530 535 540
 Ala Gly Thr Gln Gln Pro Leu Pro Pro Leu Leu Gln Glu Pro Ala Ser
 545 550 555 560
 His Ala Trp Arg Pro Arg Ala Gly Ala Arg Arg His Arg Thr Val Leu
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 Leu Pro Leu Arg Pro Leu Arg Thr Glu Thr Asp His Arg Leu Gly Ala
 580 585 590
 Gly

<210> 16
 <211> 1938
 <212> DNA
 <213> Homo Sapien

<400> 16

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caggattact	cgcgtctggc	tccaggcgcc	gagaaggcg	gctggcgccc	cgtggccgccc	240
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aaccgcctgc	caatcaaggt	gctgaagatg	ctgacggcac	gaactggcca	cattttgcac	480
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taccacccct	actccaagag	cccgttccc	acgcctggcg	ccccctgtgcc	ggtggccgccc	1860
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<210> 17

<211> 645

<212> PRT

<213> Homo Sapien

<400> 17

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					20				25					30	
Pro	Arg	Arg	Thr	Pro	Arg	Ala	Ala	Arg	His	Ser	Arg	Ser	Pro	Ala	Gly
	35					40						45			
Ser	Ser	Ser	Pro	Ala	Thr	Ala	Pro	Leu	Arg	Ala	Thr	Gln	Asp	Tyr	Ser
						50		55			60				
Arg	Leu	Ala	Pro	Gly	Ala	Glu	Lys	Ala	Arg	Trp	Ala	Pro	Val	Ala	Ala
	65					70			75				80		
Ala	Pro	Ala	Pro	Pro	Pro	Ala	Ala	Pro	Ala	Pro	Gly	Ala	Ser	Ala	
						85			90			95			
Gln	Pro	Arg	Ala	Arg	Pro	Ala	Pro	Pro	Gly	Ala	Leu	Pro	Pro	Ala	Ala
						100		105			110				
Pro	Met	Arg	Ala	Gly	Ser	Ser	Pro	Ala	Gly	Ser	Thr	Lys	Pro	Phe	Val
	115						120				125				
His	Ala	Val	Pro	Pro	Ser	Asp	Pro	Leu	Arg	Gln	Ala	Asn	Arg	Leu	Pro
	130					135				140					
Ile	Lys	Val	Leu	Lys	Met	Leu	Thr	Ala	Arg	Thr	Gly	His	Ile	Leu	His
	145					150				155			160		
Pro	Glu	Tyr	Leu	Gln	Pro	Leu	Pro	Ser	Thr	Pro	Val	Ser	Pro	Ile	Glu
						165			170			175			
Leu	Asp	Ala	Lys	Lys	Ser	Pro	Leu	Ala	Leu	Leu	Ala	Gln	Thr	Cys	Ser
						180		185			190				
Gln	Ile	Gly	Lys	Pro	Asp	Pro	Ser	Pro	Ser	Ser	Lys	Leu	Ser	Ser	Lys
						195		200			205				
Ser	Gly	Phe	Arg	Val	Pro	Ser	Ala	Thr	Cys	Gln	Pro	Phe	Thr	Pro	Arg
	210					215			220						
Thr	Gly	Ser	Pro	Ser	Ser	Ser	Ala	Ser	Ala	Cys	Ser	Pro	Gly	Gly	Met

225 230 235 240
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 245 250 255
 Thr Asp Val Gly Gly Gly Lys Gly Thr Gly Ala Ser Ala Glu
 260 265 270
 Gly Gly Pro Thr Gly Leu Ala His Gly Arg Ile Ser Cys Gly Gly
 275 280 285
 Ile Asn Val Asp Val Asn Gln His Pro Asp Gly Gly Pro Gly Gly Lys
 290 295 300
 Ala Leu Gly Ser Asp Cys Gly Gly Ser Ser Gly Ser Ser Ser Gly Ser
 305 310 315 320
 Gly Pro Ser Ala Pro Thr Ser Ser Val Leu Gly Ser Gly Leu Val
 325 330 335
 Ala Pro Val Ser Pro Tyr Lys Pro Gly Gln Thr Val Phe Pro Leu Pro
 340 345 350
 Pro Ala Gly Met Thr Tyr Pro Gly Ser Leu Ala Gly Ala Tyr Ala Gly
 355 360 365
 Tyr Pro Pro Gln Phe Leu Pro His Gly Val Ala Leu Asp Pro Thr Lys
 370 375 380
 Pro Gly Ser Leu Val Gly Ala Gln Leu Ala Ala Ala Ala Ala Gly Ser
 385 390 395 400
 Leu Gly Cys Ser Lys Pro Ala Gly Ser Ser Pro Leu Ala Gly Ala Ser
 405 410 415
 Pro Pro Ser Val Met Thr Ala Ser Leu Cys Arg Asp Pro Tyr Cys Leu
 420 425 430
 Ser Tyr His Cys Ala Ser His Leu Ala Gly Ala Ala Ala Ala Ser Ala
 435 440 445
 Ser Cys Ala His Asp Pro Ala Ala Ala Ala Ala Leu Lys Ser Gly
 450 455 460
 Tyr Pro Leu Val Tyr Pro Thr His Pro Leu His Gly Val His Ser Ser
 465 470 475 480
 Leu Thr Ala Ala Ala Ala Gly Ala Thr Pro Pro Ser Leu Ala Gly
 485 490 495
 His Pro Leu Tyr Pro Tyr Gly Phe Met Leu Pro Asn Asp Pro Leu Pro
 500 505 510
 His Ile Cys Asn Trp Val Ser Ala Asn Gly Pro Cys Asp Lys Arg Phe
 515 520 525
 Ala Thr Ser Glu Glu Leu Leu Ser His Leu Arg Thr His Thr Ala Phe
 530 535 540
 Pro Gly Thr Asp Lys Leu Leu Ser Gly Tyr Pro Ser Ser Ser Ser Met
 545 550 555 560
 Ala Ser Ala Ala Ala Ala Met Ala Cys His Met His Ile Pro Thr
 565 570 575
 Ser Gly Ala Pro Gly Ser Pro Gly Thr Leu Ala Leu Arg Ser Pro His
 580 585 590
 His Ala Leu Gly Leu Ser Ser Arg Tyr His Pro Tyr Ser Lys Ser Pro
 595 600 605
 Leu Pro Thr Pro Gly Ala Pro Val Pro Val Pro Ala Ala Thr Gly Pro
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 Ala Leu Gly Tyr Gln
 645

<211> 4022
<212> DNA
<213> Homo Sapien

<220>
<221> misc_feature
<222> (1)...(4022)
<223> n = A,T,C or G

<400> 18

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caacatcacc	gccccggat	ncnaaggcgc	caggaggaag	cagccctgct	cagccaggag	300
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gtggaggaat	atgacccggac	atcccgagg	gtgtggAAC	agtatgccc	ggccaactgg	2040
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gg						4022

<210> 19
<211> 1265
<212> PRT
<213> Homo Sapien

<220>
<221> VARIANT
<222> (1) ... (1265)
<223> Xaa = Any Amino Acid

<400> 19

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				20					25				30		
His	His	Arg	Gly	Glu	Xaa	Xaa	Arg	Arg	Gln	Glu	Glu	Ala	Ala	Leu	Leu
				35					40				45		
Ser	Gln	Glu	Phe	Ala	Glu	Ala	Trp	Gly	Gln	Lys	Ala	Lys	Glu	Leu	Tyr
				50					55				60		
Glu	Pro	Ile	Trp	Gln	Asn	Phe	Thr	Asp	Pro	Gln	Leu	Arg	Arg	Ile	Ile
				65					70				75		80
Gly	Ala	Val	Arg	Thr	Leu	Gly	Ser	Ala	Asn	Leu	Pro	Leu	Ala	Lys	Arg
					85				90				95		
Gln	Gln	Tyr	Asn	Ala	Leu	Leu	Ser	Asn	Met	Ser	Arg	Ile	Tyr	Ser	Thr
					100				105				110		
Ala	Lys	Val	Cys	Leu	Pro	Asn	Lys	Thr	Ala	Thr	Cys	Trp	Ser	Leu	Asp
				115					120				125		
Pro	Asp	Leu	Thr	Asn	Ile	Leu	Ala	Ser	Ser	Arg	Ser	Tyr	Ala	Met	Leu
				130					135				140		
Leu	Phe	Ala	Trp	Glu	Gly	Trp	His	Asn	Ala	Ala	Gly	Ile	Pro	Leu	Lys
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Pro Leu Tyr Glu Asp Phe Thr Ala Leu Ser Asn Glu Ala Tyr Lys Gln
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 Asp Gly Phe Thr Asp Thr Gly Ala Tyr Trp Arg Ser Trp Tyr Asn Ser
 180 185 190
 Pro Thr Phe Glu Asp Asp Leu Glu His Leu Tyr Gln Gln Leu Glu Pro
 195 200 205
 Leu Tyr Leu Asn Leu His Ala Phe Val Arg Arg Ala Leu His Arg Arg
 210 215 220
 Tyr Gly Asp Arg Tyr Ile Asn Leu Arg Gly Pro Ile Pro Ala His Leu
 225 230 235 240
 Leu Gly Asp Met Trp Ala Gln Ser Trp Glu Asn Ile Tyr Asp Met Val
 245 250 255
 Val Pro Phe Pro Asp Lys Pro Asn Leu Asp Val Thr Ser Thr Met Leu
 260 265 270
 Gln Gln Gly Trp Asn Ala Thr His Met Phe Arg Val Ala Glu Glu Phe
 275 280 285
 Phe Thr Ser Leu Glu Leu Ser Pro Met Pro Pro Glu Phe Trp Glu Gly
 290 295 300
 Ser Met Leu Glu Lys Pro Ala Asp Gly Arg Glu Val Val Cys His Ala
 305 310 315 320
 Ser Ala Trp Asp Phe Tyr Asn Arg Lys Asp Phe Arg Ile Lys Gln Cys
 325 330 335
 Thr Arg Val Thr Met Asp Gln Leu Ser Thr Val His His Glu Met Gly
 340 345 350
 His Ile Gln Tyr Tyr Leu Gln Tyr Lys Asp Leu Pro Val Ser Leu Arg
 355 360 365
 Arg Gly Ala Asn Pro Gly Phe His Glu Ala Ile Gly Asp Val Leu Ala
 370 375 380
 Leu Ser Val Ser Thr Pro Glu His Leu His Lys Ile Gly Leu Leu Asp
 385 390 395 400
 Arg Val Thr Asn Asp Thr Glu Ser Asp Ile Asn Tyr Leu Leu Lys Met
 405 410 415
 Ala Leu Glu Lys Ile Ala Phe Leu Pro Phe Gly Tyr Leu Val Asp Gln
 420 425 430
 Trp Arg Trp Gly Val Phe Ser Gly Arg Thr Pro Pro Ser Arg Tyr Asn
 435 440 445
 Phe Asp Trp Trp Tyr Leu Arg Thr Lys Tyr Gln Gly Ile Cys Pro Pro
 450 455 460
 Val Thr Arg Asn Glu Thr His Phe Asp Ala Gly Ala Lys Phe His Val
 465 470 475 480
 Pro Asn Val Thr Pro Tyr Ile Arg Tyr Phe Val Ser Phe Val Leu Gln
 485 490 495
 Phe Gln Phe His Glu Ala Leu Cys Lys Glu Ala Gly Tyr Glu Gly Pro
 500 505 510
 Leu His Gln Cys Asp Ile Tyr Arg Ser Thr Lys Ala Gly Ala Lys Leu
 515 520 525
 Arg Lys Val Leu Gln Ala Gly Ser Ser Arg Pro Trp Gln Glu Val Leu
 530 535 540
 Lys Asp Met Val Gly Leu Asp Ala Leu Asp Ala Gln Pro Leu Leu Lys
 545 550 555 560
 Tyr Phe Gln Pro Val Thr Gln Trp Leu Gln Glu Gln Asn Gln Gln Asn
 565 570 575
 Gly Glu Val Leu Gly Trp Pro Glu Tyr Gln Trp His Pro Pro Leu Pro
 580 585 590
 Asp Asn Tyr Pro Glu Gly Ile Asp Leu Val Thr Asp Glu Ala Glu Ala

595	600	605
Ser Lys Phe Val Glu Glu Tyr Asp Arg Thr Ser Gln Val Val Trp Asn		
610	615	620
Glu Tyr Ala Glu Ala Asn Trp Asn Tyr Asn Thr Asn Ile Thr Thr Glu		
625	630	635
Thr Ser Lys Ile Leu Leu Gln Lys Asn Met Gln Ile Ala Asn His Thr		
645	650	655
Leu Lys Tyr Gly Thr Gln Ala Arg Lys Phe Asp Val Asn Gln Leu Gln		
660	665	670
Asn Thr Thr Ile Lys Arg Ile Ile Lys Lys Val Gln Asp Leu Glu Arg		
675	680	685
Ala Ala Leu Pro Ala Gln Glu Leu Glu Glu Tyr Asn Lys Ile Leu Leu		
690	695	700
Asp Met Glu Thr Thr Tyr Ser Val Ala Thr Val Cys His Pro Asn Gly		
705	710	715
Ser Cys Leu Gln Leu Glu Pro Asp Leu Thr Asn Val Met Ala Thr Ser		
725	730	735
Arg Lys Tyr Glu Asp Leu Leu Trp Ala Trp Glu Gly Trp Arg Asp Lys		
740	745	750
Ala Gly Arg Ala Ile Leu Gln Phe Tyr Pro Lys Tyr Val Glu Leu Ile		
755	760	765
Asn Gln Ala Ala Arg Leu Asn Gly Tyr Val Asp Ala Gly Asp Ser Trp		
770	775	780
Arg Ser Met Tyr Glu Thr Pro Ser Leu Glu Gln Asp Leu Glu Arg Leu		
785	790	795
Phe Gln Glu Leu Gln Pro Leu Tyr Leu Asn Leu His Ala Tyr Val Arg		
805	810	815
Arg Ala Leu His Arg His Tyr Gly Ala Gln His Ile Asn Leu Glu Gly		
820	825	830
Pro Ile Pro Ala His Leu Leu Gly Asn Met Trp Ala Gln Thr Trp Ser		
835	840	845
Asn Ile Tyr Asp Leu Val Val Pro Phe Pro Ser Ala Pro Ser Met Asp		
850	855	860
Thr Thr Glu Ala Met Leu Lys Gln Gly Trp Thr Pro Arg Arg Met Phe		
865	870	875
Lys Glu Ala Asp Asp Phe Phe Thr Ser Leu Gly Leu Leu Pro Val Pro		
885	890	895
Pro Glu Phe Trp Asn Lys Ser Met Leu Glu Lys Pro Thr Asp Gly Arg		
900	905	910
Glu Val Val Cys His Ala Ser Ala Trp Asp Phe Tyr Asn Gly Lys Asp		
915	920	925
Phe Arg Ile Lys Gln Cys Thr Thr Val Asn Leu Glu Asp Leu Val Val		
930	935	940
Ala His His Glu Met Gly His Ile Gln Tyr Phe Met Gln Tyr Lys Asp		
945	950	955
Leu Pro Val Ala Leu Arg Glu Gly Ala Asn Pro Gly Phe His Glu Ala		
965	970	975
Ile Gly Asp Val Leu Ala Leu Ser Val Ser Thr Pro Lys His Leu His		
980	985	990
Ser Leu Asn Leu Leu Ser Ser Glu Gly Gly Ser Asp Glu His Asp Ile		
995	1000	1005
Asn Phe Leu Met Lys Met Ala Leu Asp Lys Ile Ala Phe Ile Pro Phe		
1010	1015	1020
Ser Tyr Leu Val Asp Gln Trp Arg Trp Arg Val Phe Asp Gly Ser Ile		
1025	1030	1035
		1040

Thr Lys Glu Asn Tyr Asn Gln Glu Trp Trp Ser Leu Arg Leu Lys Tyr
 1045 1050 1055
 Gln Gly Leu Cys Pro Pro Val Pro Arg Thr Gln Gly Asp Phe Asp Pro
 1060 1065 1070
 Gly Ala Lys Phe His Ile Pro Ser Ser Val Pro Tyr Ile Arg Tyr Phe
 1075 1080 1085
 Val Ser Phe Ile Ile Gln Phe Gln Phe His Glu Ala Leu Cys Gln Ala
 1090 1095 1100
 Ala Gly His Thr Gly Pro Leu His Lys Cys Asp Ile Tyr Gln Ser Lys
 1105 1110 1115 1120
 Glu Ala Gly Gln Arg Leu Ala Thr Ala Met Lys Leu Gly Phe Ser Arg
 1125 1130 1135
 Pro Trp Pro Glu Ala Met Gln Leu Ile Thr Gly Gln Pro Asn Met Ser
 1140 1145 1150
 Ala Ser Ala Met Leu Ser Tyr Phe Lys Pro Leu Leu Asp Trp Leu Arg
 1155 1160 1165
 Thr Glu Asn Glu Leu His Gly Glu Lys Leu Gly Trp Pro Gln Tyr Asn
 1170 1175 1180
 Trp Thr Pro Asn Ser Ala Arg Ser Glu Gly Pro Leu Pro Asp Ser Gly
 1185 1190 1195 1200
 Arg Val Ser Phe Leu Gly Leu Asp Leu Asp Ala Gln Gln Ala Arg Val
 1205 1210 1215
 Gly Gln Trp Leu Leu Phe Leu Gly Ile Ala Leu Leu Val Ala Thr
 1220 1225 1230
 Leu Gly Leu Ser Gln Arg Leu Phe Ser Ile Arg His Arg Ser Leu His
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 Arg His Ser His Gly Pro Gln Phe Gly Ser Glu Val Glu Leu Arg His
 1250 1255 1260
 Ser
 1265

<210> 20
 <211> 954
 <212> DNA
 <213> Homo Sapien

<400> 20

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ggacgcggtg	cgcaaatccc	tgcaagggggt	ggcaggtgtc	caggatgtgg	aggtgcactt	180
ggaggaccag	atggtcttgg	tacacaccac	tctaccacgc	caggaggtgc	aggctctcct	240
ggaaggcacg	gggcggcagg	cggtaactcaa	gggcattggc	agcggccagt	tgcagaatct	300
ggggcagca	gtggccatcc	tgggggggccc	tggcaccgtg	caggggggtgg	tgcgcttcct	360
acagctgacc	cctgagcgct	gcctcatcga	ggaaactatt	gacggcctgg	agcctgggct	420
gcatggactc	cacgtccatc	agtacgggaa	ccttacaaac	aactgcaaca	gctgtggaa	480
tcacttaac	cctgatggag	catctcatgg	gggccccag	gactctgacc	ggcaccgcgg	540
agacctgggc	aatgtccgtg	ctgatgctga	cggccgcgc	atttcagaa	tggaggatga	600
gcagctgaag	gtgtgggatg	tgattggccg	cagcctgatt	attgatgagg	gagaagatga	660
cctggggccgg	ggaggccatc	ccttataccaa	gatcacaggg	aactccgggg	agaggttggc	720
ctgtggcatac	attgcacgct	ccgctggcct	tttccagaac	cccaagcaga	tctgctcttg	780
cgtatggcctc	accatctggg	aggagcgagg	ccggcccatc	gctggcaagg	gcccgaaagg	840
agtcaagcgca	gccccctgccc	acctttgagc	agacctcaact	tggctctgtt	gctgtcctcc	900
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<210> 21

<211> 288
<212> PRT
<213> Homo Sapien

<400> 21

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Ser Asp Ser Gly Asn Gln Gly Thr Leu Cys Thr Leu Glu Phe Ala Val
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Gln Met Thr Cys Gln Ser Cys Val Asp Ala Val Arg Lys Ser Leu Gln
35 40 45
Gly Val Ala Gly Val Gln Asp Val Glu Val His Leu Glu Asp Gln Met
50 55 60
Val Leu Val His Thr Thr Leu Pro Ser Gln Glu Val Gln Ala Leu Leu
65 70 75 80
Glu Gly Thr Gly Arg Gln Ala Val Leu Lys Gly Met Gly Ser Gly Gln
85 90 95
Leu Gln Asn Leu Gly Ala Ala Val Ala Ile Leu Gly Gly Pro Gly Thr
100 105 110
Val Gln Gly Val Val Arg Phe Leu Gln Leu Thr Pro Glu Arg Cys Leu
115 120 125
Ile Glu Gly Thr Ile Asp Gly Leu Glu Pro Gly Leu His Gly Leu His
130 135 140
Val His Gln Tyr Gly Asp Leu Thr Asn Asn Cys Asn Ser Cys Gly Asn
145 150 155 160
His Phe Asn Pro Asp Gly Ala Ser His Gly Gly Pro Gln Asp Ser Asp
165 170 175
Arg His Arg Gly Asp Leu Gly Asn Val Arg Ala Asp Ala Asp Gly Arg
180 185 190
Ala Ile Phe Arg Met Glu Asp Glu Gln Leu Lys Val Trp Asp Val Ile
195 200 205
Gly Arg Ser Leu Ile Ile Asp Glu Gly Glu Asp Asp Leu Gly Arg Gly
210 215 220
Gly His Pro Leu Ser Lys Ile Thr Gly Asn Ser Gly Glu Arg Leu Ala
225 230 235 240
Cys Gly Ile Ile Ala Arg Ser Ala Gly Leu Phe Gln Asn Pro Lys Gln
245 250 255
Ile Cys Ser Cys Asp Gly Leu Thr Ile Trp Glu Glu Arg Gly Arg Pro
260 265 270
Ile Ala Gly Lys Gly Pro Lys Gly Val Ser Ala Ala Pro Ala His Leu
275 280 285

<210> 22
<211> 1006
<212> DNA
<213> Homo Sapien

<400> 22

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gccaagaaga acgacattcc ctgcgatgtt cgcacatgtgg atctgattaa aggtcagcac 120
ttaagcgatg cctttgccc ggtgaacccc ctcaagaagg tgccagcctt gaaggacggg 180
gacttcaccc tgcacggagag tgcgtccatc ctgcgttacc tgacgcgcaa atataaggtc 240
cctgtactact ggtaccctca ggacctgcag gcccgtgccc gtgtggatga gtacctggca 300
tggcagcaca cgactctgcg gagaagctgc ctccggccct tgcgtccataa ggtgtatgttc 360
cctgtttcc tgggtgagcc agtatctccc cagacactgg cagccaccctt ggcagagttt 420

gatgtgaccc	tgcagttgct	cgaggacaag	ttcctccaga	acaaggcctt	ccttactgg	480
cctcacatct	ccttagctga	cctcgtagcc	atcacgggc	tgtatgcattc	cgtgggtgct	540
ggctgccaag	tcttcgaagg	ccgacccaag	ctggccacat	ggcggcagcg	cgtggaggca	600
gcagtggggg	aggacctt	ccaggaggcc	catgaggtca	ttctgaaggc	caaggacttc	660
ccacctgcag	acccaccat	aaagcagaag	ctgatgcct	gggtgctggc	catgatccgg	720
tgagctggga	aacctcaccc	ttgcaccgtc	ctcagcagtc	cacaaagcat	tttcatttct	780
aatggccat	gggagccagg	cccagaaagc	aggaatggct	tgcctaagac	ttgcccagt	840
cccagagcac	ctcacctccc	gaagccacca	tccccaccct	gtcttccaca	gccgcctgaa	900
agccacaatg	agaatgatgc	acactgaggc	cttgtgtccc	ttaatcact	gcatttcatt	960
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<210> 23

<211> 240

<212> PRT

<213> Homo Sapien

<400> 23

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Val	Tyr	Ile	Phe	Ala	Lys	Lys	Asn	Asp	Ile	Pro	Phe	Glu	Leu	Arg	Ile
		20						25				30			
Val	Asp	Leu	Ile	Lys	Gly	Gln	His	Leu	Ser	Asp	Ala	Phe	Ala	Gln	Val
	35							40				45			
Asn	Pro	Leu	Lys	Lys	Val	Pro	Ala	Leu	Lys	Asp	Gly	Asp	Phe	Thr	Leu
	50							55				60			
Thr	Glu	Ser	Val	Ala	Ile	Leu	Tyr	Leu	Thr	Arg	Lys	Tyr	Lys	Val	
	65						70			75			80		
Pro	Asp	Tyr	Trp	Tyr	Pro	Gln	Asp	Leu	Gln	Ala	Arg	Ala	Arg	Val	Asp
		85						90				95			
Glu	Tyr	Leu	Ala	Trp	Gln	His	Thr	Thr	Leu	Arg	Arg	Ser	Cys	Leu	Arg
		100						105				110			
Ala	Leu	Trp	His	Lys	Val	Met	Phe	Pro	Val	Phe	Leu	Gly	Glu	Pro	Val
	115						120				125				
Ser	Pro	Gln	Thr	Leu	Ala	Ala	Thr	Leu	Ala	Glu	Leu	Asp	Val	Thr	Leu
	130						135				140				
Gln	Leu	Leu	Glu	Asp	Lys	Phe	Leu	Gln	Asn	Lys	Ala	Phe	Leu	Thr	Gly
	145						150			155			160		
Pro	His	Ile	Ser	Leu	Ala	Asp	Leu	Val	Ala	Ile	Thr	Glu	Leu	Met	His
		165						170				175			
Pro	Val	Gly	Ala	Gly	Cys	Gln	Val	Phe	Glu	Gly	Arg	Pro	Lys	Leu	Ala
		180						185				190			
Thr	Trp	Arg	Gln	Arg	Val	Glu	Ala	Ala	Val	Gly	Glu	Asp	Leu	Phe	Gln
	195						200				205				
Glu	Ala	His	Glu	Val	Ile	Leu	Lys	Ala	Lys	Asp	Phe	Pro	Pro	Ala	Asp
	210						215				220				
Pro	Thr	Ile	Lys	Gln	Lys	Leu	Met	Pro	Trp	Val	Leu	Ala	Met	Ile	Arg
	225						230				235			240	

<210> 24

<211> 2442

<212> DNA

<213> Homo Sapien

<400> 24

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60

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gcttcctga aaaaatcagg gcttccagac ttgatacttg gaaagatttg ggatttagcc 180
gacacagatg gcaaaggatc cctgaacaaa caagaattct ttgttgctt gcgtcttgc 240
gcatgtgccc agaatggatt ggaagttca ctaagtagtt tgaacctggc tggatcccca 300
ccaagatttc ctgaagataa ggc当地at gatgcaatat ttgatagttt aagcccagtg 360
aatggatttc tgtctggta taaagtggaa ccagtgtgc tcaactctaa gttacctgtg 420
gatatccttga aagagtttggagttt gatattgacc atgatggaaat gcttgacaga 480
gatgagtttgc cagttgccat gttttggta tactgtgcac tggagaaaga acctgtgcca 540
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tctgtgcgtt tgatcccctc tttagcatca gccaaggaaat cttaccactc cttaccatct 660
gttaggcattt tacctaccaa agcaccatta agacagtggg ttgtatcccc tcgagaaaaaa 720
gctaaatatg atgaaatctt cctgaaaact gataaaagata tggacggatt tggatctgga 780
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gagagtgttag agtcaggaa ggctcagttt gaccccttca agcagcacca acaagattca 1500
caacaggaaaaa tttagtcaat gcaaatgaaa ctgatggaaa tggaaagattt ggaaaatcat 1560
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cggtcagccat tcagcaccat ctagcagtttgc ttagtgcattt caaaaaatgtt atttggggaa 2100
acatcggttca aaagtgcaga tgaaccccca gcactgcccac caaagatcg aactccaaaca 2160
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tggatccat tcacttctgc tactaccactt accaataaaag agtgcgtatcc aagcaatttt 2280
gccaacttca gtgcttatcc ctctgaagaa gatatgcgtt aatggggccaa gagggaaaatg 2340
gagagagagg aagagcagag gcttgcggca ctaaatcgc aggaacaaga agacttagaa 2400
ctggcttatttgc cactcagcaat atctgagata tcagaagcat ga 2442

<210> 25
<211> 813
<212> PRT
<213> Homo Sapien

<400> 25
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Pro Val Tyr Glu Lys Tyr Tyr Arg Gln Val Asp Thr Gly Asn Thr Gly
20 25 30
Arg Val Leu Ala Ser Asp Ala Ala Phe Leu Lys Lys Ser Gly Leu
35 40 45
Pro Asp Leu Ile Leu Gly Lys Ile Trp Asp Leu Ala Asp Thr Asp Gly
50 55 60

Lys Gly Ile Leu Asn Lys Gln Glu Phe Phe Val Ala Leu Arg Leu Val
 65 70 75 80
 Ala Cys Ala Gln Asn Gly Leu Glu Val Ser Leu Ser Ser Leu Asn Leu
 85 90 95
 Ala Val Pro Pro Pro Arg Phe Pro Glu Asp Lys Ala Lys Tyr Asp Ala
 100 105 110
 Ile Phe Asp Ser Leu Ser Pro Val Asn Gly Phe Leu Ser Gly Asp Lys
 115 120 125
 Val Lys Pro Val Leu Leu Asn Ser Lys Leu Pro Val Asp Ile Leu Gly
 130 135 140
 Arg Val Trp Glu Leu Ser Asp Ile Asp His Asp Gly Met Leu Asp Arg
 145 150 155 160
 Asp Glu Phe Ala Val Ala Met Phe Leu Val Tyr Cys Ala Leu Glu Lys
 165 170 175
 Glu Pro Val Pro Met Ser Leu Pro Pro Ala Leu Val Pro Pro Ser Lys
 180 185 190
 Arg Lys Thr Val Ser Ile Ser Gly Ser Val Arg Leu Ile Pro Ser Ser
 195 200 205
 Ala Ser Ala Lys Glu Ser Tyr His Ser Leu Pro Ser Val Gly Ile Leu
 210 215 220
 Pro Thr Lys Ala Pro Leu Arg Gln Trp Val Val Ser Pro Ala Glu Lys
 225 230 235 240
 Ala Lys Tyr Asp Glu Ile Phe Leu Lys Thr Asp Lys Asp Met Asp Gly
 245 250 255
 Phe Val Ser Gly Leu Glu Val Arg Glu Ile Phe Leu Lys Thr Gly Leu
 260 265 270
 Pro Ser Thr Leu Leu Ala His Ile Trp Ser Leu Cys Asp Thr Lys Asp
 275 280 285
 Cys Gly Lys Leu Ser Lys Asp Gln Phe Ala Leu Ala Phe His Leu Ile
 290 295 300
 Ser Gln Lys Leu Ile Lys Gly Ile Asp Pro Pro His Val Leu Thr Pro
 305 310 315 320
 Glu Met Ile Pro Pro Ser Asp Arg Ala Ser Leu Gln Lys Asn Ile Ile
 325 330 335
 Gly Ser Ser Pro Val Ala Asp Phe Ser Ala Ile Lys Glu Leu Asp Thr
 340 345 350
 Leu Asn Asn Glu Ile Val Asp Leu Gln Arg Glu Lys Asn Asn Val Glu
 355 360 365
 Gln Asp Leu Lys Glu Lys Glu Asp Thr Ile Lys Gln Arg Thr Ser Glu
 370 375 380
 Val Gln Asp Leu Gln Asp Glu Val Gln Arg Glu Asn Thr Asn Leu Gln
 385 390 395 400
 Lys Leu Gln Ala Gln Lys Gln Gln Val Gln Glu Leu Leu Asp Glu Leu
 405 410 415
 Asp Glu Gln Lys Ala Gln Leu Glu Glu Gln Leu Lys Glu Val Arg Lys
 420 425 430
 Lys Cys Ala Glu Glu Ala Gln Leu Ile Ser Ser Leu Lys Ala Glu Leu
 435 440 445
 Thr Ser Gln Glu Ser Gln Ile Ser Thr Tyr Glu Glu Leu Ala Lys
 450 455 460
 Ala Arg Glu Glu Leu Ser Arg Leu Gln Gln Glu Thr Ala Glu Leu Glu
 465 470 475 480
 Glu Ser Val Glu Ser Gly Lys Ala Gln Leu Glu Pro Leu Gln Gln His
 485 490 495
 Leu Gln Asp Ser Gln Gln Glu Ile Ser Ser Met Gln Met Lys Leu Met

500	505	510													
Glu	Met	Lys	Asp	Leu	Glu	Asn	His	Asn	Ser	Gln	Leu	Asn	Trp	Cys	Ser
515					520							525			
Ser	Pro	His	Ser	Ile	Leu	Val	Asn	Gly	Ala	Thr	Asp	Tyr	Cys	Ser	Leu
530					535					540					
Ser	Thr	Ser	Ser	Ser	Glu	Thr	Ala	Asn	Leu	Asn	Glu	His	Val	Glu	Gly
545					550				555			560			
Gln	Ser	Asn	Leu	Glu	Ser	Glu	Pro	Ile	His	Gln	Glu	Ser	Pro	Ser	Asp
565					570				575						
Pro	Phe	Val	Gly	Asn	Pro	Phe	Gly	Gly	Asp	Pro	Phe	Lys	Gly	Ser	Asp
580					585				590						
Pro	Phe	Ala	Ser	Asp	Cys	Phe	Phe	Arg	Gln	Ser	Thr	Asp	Pro	Phe	Ala
595					600				605						
Thr	Ser	Ser	Thr	Asp	Pro	Phe	Ser	Ala	Ala	Asn	Ser	Ser	Ile	Thr	
610					615				620						
Ser	Val	Glu	Thr	Leu	Lys	His	Asn	Asp	Pro	Phe	Ala	Pro	Gly	Gly	Thr
625					630				635			640			
Val	Val	Ala	Ala	Ser	Asp	Ser	Ala	Thr	Asp	Pro	Phe	Ala	Ser	Val	Phe
645					650				655						
Gly	Asn	Glu	Ser	Phe	Gly	Gly	Gly	Phe	Ala	Asp	Phe	Ser	Thr	Leu	Ser
660					665				670						
Lys	Val	Asn	Asn	Glu	Asp	Pro	Phe	Arg	Ser	Ala	Thr	Ser	Ser	Ser	Val
675					680				685						
Ser	Asn	Val	Val	Ile	Thr	Lys	Asn	Val	Phe	Glu	Glu	Thr	Ser	Val	Lys
690					695				700						
Ser	Glu	Asp	Glu	Pro	Pro	Ala	Leu	Pro	Pro	Lys	Ile	Gly	Thr	Pro	Thr
705					710				715			720			
Arg	Pro	Cys	Pro	Leu	Pro	Pro	Gly	Asn	Asp	Ser	Pro	Lys	Glu	Lys	Asp
725					730				735						
Pro	Glu	Met	Phe	Cys	Asp	Pro	Phe	Thr	Ser	Ala	Thr	Thr	Thr	Thr	Asn
740					745				750						
Lys	Glu	Ala	Asp	Pro	Ser	Asn	Phe	Ala	Asn	Phe	Ser	Ala	Tyr	Pro	Ser
755					760				765						
Glu	Glu	Asp	Met	Ile	Glu	Trp	Ala	Lys	Arg	Glu	Ser	Glu	Arg	Glu	Glu
770					775				780						
Glu	Gln	Arg	Leu	Ala	Arg	Leu	Asn	Gln	Gln	Glu	Gln	Glu	Asp	Leu	Glu
785					790				795			800			
Leu	Ala	Ile	Ala	Leu	Ser	Lys	Ser	Glu	Ile	Ser	Glu	Ala			
805					810										

<210> 26
 <211> 1357
 <212> DNA
 <213> Homo Sapien

<400> 26
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 gtgtcccgga atcggcttagc ccaggtgaag aggaagatcc tgggtctggaa tctggatgag 240
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 attcttaaga ggagatatta cagacagcac tgcactttgg agttgggcag ctacatcaag 540

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gcttacagga	gccatccaga	caatgccatc	cccatcaaat	cctgggttcag	tgaccccagc	660
gacacagccc	ttctcaacct	gctcccaatg	ctggatgccc	tcaggttcac	cgctgatgtt	720
cgtccgtgc	tgagccaaa	ccttcaccaa	catcggtct	ggtgacagct	gctcccccctc	780
cacctgagtt	gggggtgggg	ggaaagggag	ggcgagccct	tggatgccc	tctgatgccc	840
tgtccaatgt	gaggactgcc	tggcaggggt	ctgcccctcc	cacccctctc	tgccctggga	900
gccctacact	ccacttggga	gtctggatgg	acacatggc	caggggctct	gaagcagcct	960
cactcttaac	ttcgtttca	cactccatgg	aaacccaga	ctgggacaca	ggcggaaagcc	1020
taggagagcc	gaatcagtgt	ttgtgaagag	gcaggactgg	ccagagtgcac	agacatacgg	1080
tgatccagga	ggctcaaaga	gaagccaagt	cagcttgc	gtgatttgat	ttttttaaa	1140
aaactcttgt	acaaaactga	tctaattttt	cactcctgct	ccaagggctg	ggctgtgggt	1200
gggatactgg	gattttggc	cactggattt	tccctaaatt	tgtcccccct	ttactctccc	1260
tctattttc	tctccttaga	ctccctcaga	cctgtaacca	gctttgtgtc	ttttttcctt	1320
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<210> 27

<211> 254

<212> PRT

<213> Homo Sapien

<400> 27

Pro	Gly	Ala	Gly	Gly	Ala	Gly	Val	Ile	Gly	Met	Met	Arg	Thr	Gln	Cys
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Leu	Leu	Gly	Leu	Arg	Thr	Phe	Val	Ala	Phe	Ala	Ala	Lys	Leu	Trp	Ser
					20				25			30			
Phe	Phe	Ile	Tyr	Leu	Leu	Arg	Arg	Gln	Ile	Arg	Thr	Val	Ile	Gln	Tyr
								35	40		45				
Gln	Thr	Val	Arg	Tyr	Asp	Ile	Leu	Pro	Leu	Ser	Pro	Val	Ser	Arg	Asn
								50	55		60				
Arg	Leu	Ala	Gln	Val	Lys	Arg	Lys	Ile	Leu	Val	Leu	Asp	Leu	Asp	Glu
					65				70		75			80	
Thr	Leu	Ile	His	Ser	His	His	Asp	Gly	Val	Leu	Arg	Pro	Thr	Val	Arg
								85	90		95				
Pro	Gly	Thr	Pro	Pro	Asp	Phe	Ile	Leu	Lys	Val	Val	Ile	Asp	Lys	His
							100		105			110			
Pro	Val	Arg	Phe	Phe	Val	His	Lys	Arg	Pro	His	Val	Asp	Phe	Phe	Leu
							115		120			125			
Glu	Val	Val	Ser	Gln	Trp	Tyr	Glu	Leu	Val	Val	Phe	Thr	Ala	Ser	Met
					130				135		140				
Glu	Ile	Tyr	Gly	Ser	Ala	Val	Ala	Asp	Lys	Leu	Asp	Asn	Ser	Arg	Ser
							145		150		155		160		
Ile	Leu	Lys	Arg	Arg	Tyr	Tyr	Arg	Gln	His	Cys	Thr	Leu	Glu	Leu	Gly
							165		170		175				
Ser	Tyr	Ile	Lys	Asp	Leu	Ser	Val	Val	His	Ser	Asp	Leu	Ser	Ser	Ile
							180		185		190				
Val	Ile	Leu	Asp	Asn	Ser	Pro	Gly	Ala	Tyr	Arg	Ser	His	Pro	Asp	Asn
							195		200		205				
Ala	Ile	Pro	Ile	Lys	Ser	Trp	Phe	Ser	Asp	Pro	Ser	Asp	Thr	Ala	Leu
							210		215		220				
Leu	Asn	Leu	Leu	Pro	Met	Leu	Asp	Ala	Leu	Arg	Phe	Thr	Ala	Asp	Val
							225		230		235		240		
Arg	Ser	Val	Leu	Ser	Arg	Asn	Leu	His	Gln	His	Arg	Leu	Trp		
							245		250						

<210> 28

<211> 1812
 <212> DNA
 <213> Homo Sapien

<400> 28

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aaatttgcag	agcatggagg	ttggcacgtt	tatggccttc	ttcagaggc	agacaagaag	180			
tatgtgaag	ccattaagt	ttacagaaat	gcactaaaat	gggataaaga	caatctcaa	240			
atcttaaggg	acctttcctt	actacagatt	caaatgcgag	atcttgaggg	ttacaggaca	300			
tccctgaca	aggtggatta	tgaatatagt	gaactactt	tatatcagaa	tcaaggttctt	360			
cgggaagcag	gtctctatag	agaagcttt	gaacatctt	gtacctatga	aaagcagatt	420			
tgtgataaac	ttgctgtaga	agaaaaccaa	gggaaacttc	tgttgcact	atgtcgttt	480			
gaagatgctg	cagatgtt	taaggattg	caagagagaa	atcctgaaaa	ctggccctat	540			
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gagaaggcct	ggactaaata	tcccaggg	ctgggtccaa	gaaggctg	gttaaacttt	660			
ttatctgg	agaagttaa	agaatgtt	gataagtcc	taaggatgaa	tttcagcaag	720			
ggtgcccac	cagtctcaa	tacttaaga	tcattataca	aagacaaaga	aaagg	780			
atcatagaag	agttatgt	agttatgaa	acctctctaa	aaagctg	ccgttattaa	840			
cccaatgtat	atggaaagga	ggaaccacca	accacattac	tttgggtcc	gtactactt	900			
gcacaacatt	atgacaaaat	tggtcagcc	tctattgctt	tggagtacat	aaatactg	960			
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gctggaaata	ttaaagaagc	tgcaaggtgg	atggatgagg	cccagg	ccctt	ggacacagca	1080		
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gaaatgcagt	gcatgtgg	ccaaacagaa	tgtgcccagg	cttataa	agc	aatgaataaa	1260		
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gaccagttt	actttcatac	atactgtat	aggaagatta	cccttagatc	atatgtgg	atc	1380		
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gctatagaga	tctattgaa	gcttcatgac	aaccc	ccctt	cagatgagaa	taaagaacac	1500		
gaagctgata	cagctccaa	aatggtat	tacttagatc	cttctag	tca	gaagcg	1560		
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gaggtattgg	aagcctt	gtatggtagc	ctaggagact	gtaaaga	agc	tgctgaa	1680		
tatagagcaa	attgtcataa	gctttcc	tatgtt	ttgg	cttcatg	cc	tcctgg	gat	1740
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aatgaaattt	ga								1812

<210> 29
 <211> 603
 <212> PRT
 <213> Homo Sapien

<400> 29

Met	Pro	Ala	Val	Ser	Leu	Pro	Pro	Lys	Glu	Asn	Ala	Leu	Phe	Lys	Arg	
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Ile	Leu	Arg	Cys	Tyr	Glu	His	Lys	Gln	Tyr	Arg	Asn	Gly	Leu	Lys	Phe	
								20						30		
Cys	Lys	Gln	Ile	Leu	Ser	Asn	Pro	Lys	Phe	Ala	Glu	His	Gly	Gly	Trp	
								35						45		
His	Val	Tyr	Gly	Leu	Leu	Gln	Arg	Ser	Asp	Lys	Lys	Tyr	Asp	Glu	Ala	
								50						60		
Ile	Lys	Cys	Tyr	Arg	Asn	Ala	Leu	Lys	Trp	Asp	Lys	Asp	Asn	Leu	Gln	
								65						75		80
Ile	Leu	Arg	Asp	Leu	Ser	Leu	Leu	Gln	Ile	Gln	Met	Arg	Asp	Leu	Glu	
								85						90		95

Gly Tyr Arg Thr Ser Pro Asp Lys Val Asp Tyr Glu Tyr Ser Glu Leu
 100 105 110
 Leu Leu Tyr Gln Asn Gln Val Leu Arg Glu Ala Gly Leu Tyr Arg Glu
 115 120 125
 Ala Leu Glu His Leu Cys Thr Tyr Glu Lys Gln Ile Cys Asp Lys Leu
 130 135 140
 Ala Val Glu Glu Thr Lys Gly Glu Leu Leu Gln Leu Cys Arg Leu
 145 150 155 160
 Glu Asp Ala Ala Asp Val Tyr Arg Gly Leu Gln Glu Arg Asn Pro Glu
 165 170 175
 Asn Trp Ala Tyr Tyr Lys Gly Leu Glu Lys Ala Leu Lys Pro Ala Asn
 180 185 190
 Met Leu Glu Arg Leu Lys Ile Tyr Glu Glu Ala Trp Thr Lys Tyr Pro
 195 200 205
 Arg Gly Leu Val Pro Arg Arg Leu Pro Leu Asn Phe Leu Ser Gly Glu
 210 215 220
 Lys Phe Lys Glu Cys Leu Asp Lys Phe Leu Arg Met Asn Phe Ser Lys
 225 230 235 240
 Gly Cys Pro Pro Val Phe Asn Thr Leu Arg Ser Leu Tyr Lys Asp Lys
 245 250 255
 Glu Lys Val Ala Ile Ile Glu Glu Leu Val Val Gly Tyr Glu Thr Ser
 260 265 270
 Leu Lys Ser Cys Arg Leu Phe Asn Pro Asn Asp Asp Gly Lys Glu Glu
 275 280 285
 Pro Pro Thr Thr Leu Leu Trp Val Gln Tyr Tyr Leu Ala Gln His Tyr
 290 295 300
 Asp Lys Ile Gly Gln Pro Ser Ile Ala Leu Glu Tyr Ile Asn Thr Ala
 305 310 315 320
 Ile Glu Ser Thr Pro Thr Leu Ile Glu Leu Phe Leu Val Lys Ala Lys
 325 330 335
 Ile Tyr Lys His Ala Gly Asn Ile Lys Glu Ala Ala Arg Trp Met Asp
 340 345 350
 Glu Ala Gln Ala Leu Asp Thr Ala Asp Arg Phe Ile Asn Ser Lys Cys
 355 360 365
 Ala Lys Tyr Met Leu Lys Ala Asn Leu Ile Lys Glu Ala Glu Glu Met
 370 375 380
 Cys Ser Lys Phe Thr Arg Glu Gly Thr Ser Ala Val Glu Asn Leu Asn
 385 390 395 400
 Glu Met Gln Cys Met Trp Phe Gln Thr Glu Cys Ala Gln Ala Tyr Lys
 405 410 415
 Ala Met Asn Lys Phe Gly Glu Ala Leu Lys Lys Cys His Glu Ile Glu
 420 425 430
 Arg His Phe Ile Glu Ile Thr Asp Asp Gln Phe Asp Phe His Thr Tyr
 435 440 445
 Cys Met Arg Lys Ile Thr Leu Arg Ser Tyr Val Asp Leu Leu Lys Leu
 450 455 460
 Glu Asp Val Leu Arg Gln His Pro Phe Tyr Phe Lys Ala Ala Arg Ile
 465 470 475 480
 Ala Ile Glu Ile Tyr Leu Lys Leu His Asp Asn Pro Leu Thr Asp Glu
 485 490 495
 Asn Lys Glu His Glu Ala Asp Thr Ala Ala Lys Met Val Tyr Tyr Leu
 500 505 510
 Asp Pro Ser Ser Gln Lys Arg Ala Ile Glu Leu Ala Thr Thr Leu Asp
 515 520 525
 Glu Ser Leu Thr Asn Arg Asn Leu Gln Thr Cys Met Glu Val Leu Glu

530	535	540
Ala Leu Tyr Asp Gly Ser	Leu Gly Asp Cys	Lys Glu Ala Ala Glu Ile
545	550	555
Tyr Arg Ala Asn Cys His	Lys Leu Phe Pro	Tyr Ala Leu Ala Phe Met
565	570	575
Pro Pro Gly Tyr Glu Glu Asp Met	Lys Ile Thr Val Asn	Gly Asp Ser
580	585	590
Ser Ala Glu Ala Glu Glu Leu Ala Asn Glu Ile		
595	600	

<210> 30

<211> 1351

<212> DNA

<213> Homo Sapien

<400> 30

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cagtgtggaa gcccgcctt	ggacaataat	gcagtctgt	cagacccctg	ctccctgatc	240
cccacacactg acaaagaaga	tgtgaccgg	gtttacccaa	actcaacgtg	caagctcgg	300
attattgcac catccagagg	ctcccccgtg	cctgtactga	gctggggcaaa	tagagaggaa	360
gtctggaaaa tcatgtaaa	caaggaaaaag	acataactaa	gggatcagca	ctttcttgag	420
caacaccctc ttctgcagcc	aaaaatgcga	gcaatttttc	tggattggtt	aatggaggtg	480
tgtgaagtct ataaacttca	cagggagacc	ttttacttgg	cacaagattt	ctttgaccgg	540
tatatggcga cacaagaaaa	tgttgtaaaa	actctttac	agcttattgg	gatttcatct	600
ttatttattt cagccaaact	tgaggaaatc	tatcctccaa	agttgcacca	gtttgcgtat	660
gtgacagatg gagcttgg	aggagatgaa	attctcacca	tggaattaat	gattatgaag	720
gcccttaagt ggcgtttaag	tccctgtact	attgtgtctt	ggctgaatgt	atacatgcag	780
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atggttataa gggagacggg	gagctaaaa	ctgaagcact	tcaggggcgt	cgctgatgaa	1080
gatgcacaca acatacagac	ccacagagac	agcttggatt	tgctggacaa	agcccggac	1140
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ccgcccacaga gcggtgttct	gggctccgtt	gtaccaagtg	gagcaggtgg	ttgcgggcaa	1260
gcgttgtcga gagccatag	ccagctgggc	agggggctga	cctctccaca	ttatcagttt	1320
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<210> 31

<211> 451

<212> PRT

<213> Homo Sapien

<220>

<221> VARIANT

<222> (1)...(451)

<223> Xaa = Any Amino Acid

<400> 31

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Asp Ala Lys Glu Arg Asp Thr Met Lys Glu Asp Gly Gly Ala Glu Phe			
20	25	30	

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 35 40 45
 Glu Glu Met Ala Lys Ile Asp Arg Thr Ala Arg Asp Gln Cys Gly Ser
 50 55 60
 Gln Pro Trp Asp Asn Asn Ala Val Cys Ala Asp Pro Cys Ser Leu Ile
 65 70 75 80
 Pro Thr Pro Asp Lys Glu Asp Asp Asp Arg Val Tyr Pro Asn Ser Thr
 85 90 95
 Cys Lys Pro Arg Ile Ile Ala Pro Ser Arg Gly Ser Pro Leu Pro Val
 100 105 110
 Leu Ser Trp Ala Asn Arg Glu Glu Val Trp Lys Ile Met Leu Asn Lys
 115 120 125
 Glu Lys Thr Tyr Leu Arg Asp Gln His Phe Leu Glu Gln His Pro Leu
 130 135 140
 Leu Gln Pro Lys Met Arg Ala Ile Leu Leu Asp Trp Leu Met Glu Val
 145 150 155 160
 Cys Glu Val Tyr Lys Leu His Arg Glu Thr Phe Tyr Leu Ala Gln Asp
 165 170 175
 Phe Phe Asp Arg Tyr Met Ala Thr Gln Glu Asn Val Val Lys Thr Leu
 180 185 190
 Leu Gln Leu Ile Gly Ile Ser Ser Leu Phe Ile Ala Ala Lys Leu Glu
 195 200 205
 Glu Ile Tyr Pro Pro Lys Leu His Gln Phe Ala Tyr Val Thr Asp Gly
 210 215 220
 Ala Cys Ser Gly Asp Glu Ile Leu Thr Met Glu Leu Met Ile Met Lys
 225 230 235 240
 Ala Leu Lys Trp Arg Leu Ser Pro Leu Thr Ile Val Ser Trp Leu Asn
 245 250 255
 Val Tyr Met Gln Val Ala Tyr Leu Asn Asp Leu His Glu Val Leu Leu
 260 265 270
 Pro Gln Tyr Pro Gln Gln Ile Phe Ile Gln Ile Ala Glu Leu Leu Asp
 275 280 285
 Leu Cys Val Leu Asp Val Asp Cys Leu Glu Phe Pro Tyr Gly Ile Leu
 290 295 300
 Ala Ala Ser Ala Leu Tyr His Phe Ser Ser Ser Glu Leu Met Gln Lys
 305 310 315 320
 Val Ser Gly Tyr Gln Trp Cys Asp Ile Glu Asn Cys Val Lys Trp Met
 325 330 335
 Val Pro Phe Ala Met Val Ile Arg Glu Thr Gly Ser Ser Lys Leu Lys
 340 345 350
 His Phe Arg Gly Val Ala Asp Glu Asp Ala His Asn Ile Gln Thr His
 355 360 365
 Arg Asp Ser Leu Asp Leu Leu Asp Lys Ala Arg Ala Lys Lys Ala Met
 370 375 380
 Leu Ser Glu Gln Asn Arg Ala Ser Pro Leu Pro Ser Gly Leu Leu Thr
 385 390 395 400
 Pro Pro Gln Ser Gly Val Leu Gly Ser Val Val Pro Ser Gly Ala Gly
 405 410 415
 Gly Cys Gly Gln Ala Leu Cys Arg Ala His Ser Gln Leu Gly Arg Gly
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 Leu Thr Ser Pro His Tyr Gln Leu Thr Val Tyr Asn Ala Phe Asp Glu
 435 440 445
 Leu Phe Xaa
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<210> 32
 <211> 3750
 <212> DNA
 <213> Homo Sapien

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gttggctctc ctgttaggaag caaccagtct cgatctggcc caatctctcc tgcaagtatc	240
ccaggttta tggcaggcac acaaagaaac cctcagatgg ctcagtatgg acctcaacag	300
acaggaccat ccatgtcgcc tcatccttct cctggggcc agatgcatac tggaaatcagt	360
agctttcagc agagtaactc aagtggact tacggccac agatgagcca gtatggacca	420
caaggttaact actccagacc cccagcgtat agtggggtgc ccagtgcac ctacagcggc	480
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gccttgctag	ccatggccag	agtggacgaa	aaccgctcg	aattcccttt	gcacgaggc	3660
cgttgctgg	atatctcgat	atcagctgtc	ctgaactctc	tggttgcattc	tgtcatctgt	3720
gatgtactgt	ttcagattgg	gcagttatga				3750

<210> 33
 <211> 1249
 <212> PRT
 <213> Homo Sapien

<400> 33
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 20 25 30
 Gln Ser Asn Pro Ala Gln Ser Pro Phe Ser Pro His Ala Ser Pro His
 35 40 45
 Leu Ser Ser Ile Pro Gly Gly Pro Ser Pro Ser Pro Val Gly Ser Pro
 50 55 60
 Val Gly Ser Asn Gln Ser Arg Ser Gly Pro Ile Ser Pro Ala Ser Ile
 65 70 75 80
 Pro Gly Phe Met Ala Gly Thr Gln Arg Asn Pro Gln Met Ala Gln Tyr
 85 90 95
 Gly Pro Gln Gln Thr Gly Pro Ser Met Ser Pro His Pro Ser Pro Gly
 100 105 110
 Gly Gln Met His Ala Gly Ile Ser Ser Phe Gln Gln Ser Asn Ser Ser
 115 120 125
 Gly Thr Tyr Gly Pro Gln Met Ser Gln Tyr Gly Pro Gln Gly Asn Tyr
 130 135 140
 Ser Arg Pro Pro Ala Tyr Ser Gly Val Pro Ser Ala Ser Tyr Ser Gly
 145 150 155 160
 Pro Gly Pro Gly Met Gly Ile Ser Ala Asn Asn Gln Met His Gly Gln
 165 170 175
 Gly Pro Ser Gln Pro Cys Gly Ala Val Pro Leu Gly Arg Met Pro Ser
 180 185 190
 Ala Gly Met Gln Asn Arg Pro Phe Pro Gly Asn Met Ser Ser Met Thr
 195 200 205
 Pro Ser Ser Pro Gly Met Ser Gln Gln Gly Gly Pro Gly Met Gly Pro
 210 215 220
 Pro Met Pro Thr Val Asn Arg Lys Ala Gln Glu Ala Ala Ala Val
 225 230 235 240
 Met Gln Ala Ala Ala Asn Ser Ala Gln Ser Arg Tyr Ala Thr Gln Glu
 245 250 255
 His Ala Pro Gly Arg Gln Gly Ser Phe Pro Gly Met Asn Gln Ser Gly
 260 265 270

Leu Met Ala Ser Ser Ser Pro Tyr Ser Gln Pro Met Asn Asn Ser Ser
 275 280 285
 Ser Leu Met Asn Thr Gln Ala Pro Pro Tyr Ser Met Ala Pro Ala Met
 290 295 300
 Val Asn Ser Ser Ala Ala Ser Val Gly Leu Ala Asp Met Met Ser Pro
 305 310 315 320
 Gly Glu Ser Lys Leu Pro Leu Pro Leu Lys Ala Asp Gly Lys Glu Glu
 325 330 335
 Gly Thr Pro Gln Pro Glu Ser Lys Ser Lys Asp Ser Tyr Ser Ser Gln
 340 345 350
 Gly Ile Ser Gln Pro Pro Thr Pro Gly Asn Leu Pro Val Pro Ser Pro
 355 360 365
 Met Ser Pro Ser Ser Ala Ser Ile Ser Ser Phe His Gly Asp Glu Ser
 370 375 380
 Asp Ser Ile Ser Ser Pro Gly Trp Pro Lys Thr Pro Ser Ser Pro Lys
 385 390 395 400
 Ser Ser Ser Ser Thr Thr Thr Gly Glu Lys Ile Thr Lys Val Tyr Glu
 405 410 415
 Leu Gly Asn Glu Pro Glu Arg Lys Leu Trp Val Asp Arg Tyr Leu Thr
 420 425 430
 Phe Met Glu Glu Arg Gly Ser Pro Val Ser Ser Leu Pro Ala Val Gly
 435 440 445
 Lys Lys Pro Leu Asp Leu Phe Arg Leu Tyr Val Cys Val Lys Glu Ile
 450 455 460
 Gly Gly Leu Ala Gln Val Asn Lys Asn Lys Lys Trp Arg Glu Leu Ala
 465 470 475 480
 Thr Asn Leu Asn Val Gly Thr Ser Ser Ser Ala Ala Ser Ser Met Lys
 485 490 495
 Lys Gln Tyr Ile Gln Tyr Leu Phe Ala Phe Glu Ser Lys Ile Glu Pro
 500 505 510
 Asn Ser Gly Ser Leu Gln Gly Pro Gln Thr Pro Gln Ser Thr Gly Ser
 515 520 525
 Asn Ser Met Ala Glu Val Pro Gly Asp Leu Lys Pro Pro Thr Pro Ala
 530 535 540
 Ser Thr Pro His Gly Gln Met Thr Pro Met Gln Gly Gly Arg Ser Ser
 545 550 555 560
 Thr Ile Ser Val His Asp Pro Phe Ser Asp Val Ser Asp Ser Ser Phe
 565 570 575
 Pro Lys Arg Asn Ser Met Thr Pro Asn Ala Pro Tyr Gln Gln Gly Met
 580 585 590
 Ser Met Pro Asp Val Met Gly Arg Met Pro Tyr Glu Pro Asn Lys Asp
 595 600 605
 Pro Phe Gly Gly Met Arg Lys Val Pro Gly Ser Ser Glu Pro Phe Met
 610 615 620
 Thr Gln Gly Gln Met Pro Asn Ser Ser Met Gln Asp Met Tyr Asn Gln
 625 630 635 640
 Ser Pro Ser Gly Ala Met Ser Asn Leu Gly Met Gly Gln Arg Gln Gln
 645 650 655
 Phe Pro Tyr Gly Ala Ser Tyr Asp Arg Ser Thr Val Ala Thr Phe Asn
 660 665 670
 Leu Ser Gln Leu Ser Gly Phe Leu Glu Leu Leu Val Glu Tyr Phe Arg
 675 680 685
 Lys Cys Leu Ile Asp Ile Phe Gly Ile Leu Met Glu Tyr Glu Val Gly
 690 695 700
 Asp Pro Ser Gln Lys Ala Leu Asp His Asn Ala Ala Arg Lys Asp Asp

705	710	715	720
Ser Gln Ser Leu Ala Asp Asp Ser Gly Lys	Glu Glu Glu Asp Ala Glu		
725	730	735	
Cys Ile Asp Asp Asp Glu Glu Asp Glu Glu Asp Ser			
740	745	750	
Glu Lys Thr Glu Ser Asp Glu Lys Ser Ser Ile Ala Leu Thr Ala Pro			
755	760	765	
Asp Ala Ala Ala Asp Pro Lys Glu Lys Pro Lys Gln Ala Ser Lys Phe			
770	775	780	
Asp Lys Leu Pro Ile Lys Ile Val Lys Lys Asn Asn Leu Phe Val Val			
785	790	795	800
Asp Arg Ser Asp Lys Leu Gly Arg Val Gln Glu Phe Asn Ser Gly Leu			
805	810	815	
Leu His Trp Gln Leu Gly Gly Asp Thr Thr Glu His Ile Gln Thr			
820	825	830	
His Phe Glu Ser Lys Met Glu Ile Pro Pro Arg Arg Arg Pro Pro Pro			
835	840	845	
Pro Leu Ser Ser Ala Gly Arg Lys Lys Glu Gln Glu Gly Lys Gly Asp			
850	855	860	
Ser Glu Glu Gln Gln Glu Lys Ser Ile Ile Ala Thr Ile Asp Asp Val			
865	870	875	880
Leu Ser Ala Arg Pro Gly Ala Leu Pro Glu Asp Ala Asn Pro Gly Pro			
885	890	895	
Gln Thr Glu Ser Ser Lys Phe Pro Phe Gly Ile Gln Gln Ala Lys Ser			
900	905	910	
His Arg Asn Ile Lys Leu Leu Glu Asp Glu Pro Arg Ser Arg Asp Glu			
915	920	925	
Thr Pro Leu Cys Thr Ile Ala His Trp Gln Asp Ser Leu Ala Lys Arg			
930	935	940	
Cys Ile Cys Val Ser Asn Ile Val Arg Ser Leu Ser Phe Val Pro Gly			
945	950	955	960
Asn Asp Ala Glu Met Ser Lys His Pro Gly Leu Val Leu Ile Leu Gly			
965	970	975	
Lys Leu Ile Leu Leu His His Glu His Pro Glu Arg Lys Arg Ala Pro			
980	985	990	
Gln Thr Tyr Glu Lys Glu Glu Asp Glu Asp Lys Gly Val Ala Cys Ser			
995	1000	1005	
Lys Asp Glu Trp Trp Trp Asp Cys Leu Glu Val Leu Arg Asp Asn Thr			
1010	1015	1020	
Leu Val Thr Leu Ala Asn Ile Ser Gly Gln Leu Asp Leu Ser Ala Tyr			
1025	1030	1035	1040
Thr Glu Ser Ile Cys Leu Pro Ile Leu Asp Gly Leu Leu His Trp Met			
1045	1050	1055	
Val Cys Pro Ser Ala Glu Ala Gln Asp Pro Phe Pro Thr Val Gly Pro			
1060	1065	1070	
Asn Ser Val Leu Ser Pro Gln Arg Leu Val Leu Glu Thr Leu Cys Lys			
1075	1080	1085	
Leu Ser Ile Gln Asp Asn Asn Val Asp Leu Ile Leu Ala Thr Pro Pro			
1090	1095	1100	
Phe Ser Arg Gln Glu Lys Phe Tyr Ala Thr Leu Val Arg Tyr Val Gly			
1105	1110	1115	1120
Asp Arg Lys Asn Pro Val Cys Arg Glu Met Ser Met Ala Leu Leu Ser			
1125	1130	1135	
Asn Leu Ala Gln Gly Asp Ala Leu Ala Ala Arg Ala Ile Ala Val Gln			
1140	1145	1150	

Lys Gly Ser Ile Gly Asn Leu Ile Ser Phe Leu Glu Asp Gly Val Thr
 1155 1160 1165
 Met Ala Gln Tyr Gln Gln Ser Gln His Asn Leu Met His Met Gln Pro
 1170 1175 1180
 Pro Pro Leu Glu Pro Pro Ser Val Asp Met Met Cys Arg Ala Ala Lys
 1185 1190 1195 1200
 Ala Leu Leu Ala Met Ala Arg Val Asp Glu Asn Arg Ser Glu Phe Leu
 1205 1210 1215
 Leu His Glu Gly Arg Leu Leu Asp Ile Ser Ile Ser Ala Val Leu Asn
 1220 1225 1230
 Ser Leu Val Ala Ser Val Ile Cys Asp Val Leu Phe Gln Ile Gly Gln
 1235 1240 1245
 Leu

<210> 34
 <211> 2887
 <212> DNA
 <213> Homo Sapien

<400> 34

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aacactacac	cagcaactcc	tggcttccca	gcagccgaa	cacagacagg	agagagtcag	120
tggcaaata	gat	ttttttctt	tat	ttttaaa	aaaacagcaa	180
ctgttgattt	ttttttctt	ttt	gtgtgtgtgg	ttgtgttttt	taagtgtgg	240
agataccatc	ccaggctcag	tccaacccct	ctccaaaacg	gttttctga	cactccaggt	300
agcgagggag	ttgggtctcc	aggttgtgcg	aggagaaat	gatgaccgccc	aaggccgtag	360
acaaaatccc	agtaactctc	agtggttttt	tgccaccagct	gtctgacaac	atctacccgg	420
tggaggac	ctccgcac	tcggtgacca	tctttccaa	tgccgaactg	ggaggccc	480
ttgaccagat	gaacggagtg	gccggagatg	gcatgatcaa	cattgacatg	actggagaga	540
agaggtcgtt	ggatctccca	tatcccagca	gctttctcc	cgtctctgca	cctagaaaacc	600
agaccttcac	ttacatgggc	aagtctcca	ttgaccctca	gtaccctgg	gccagctgt	660
acccagaagg	cataatca	attgtgagtg	caggcatctt	gcaaggggtc	acttccccag	720
cttcaaccac	agcctcatcc	agcgtcac	ctgcctcccc	caacccactg	gccacaggac	780
ccctgggtgt	gtgcaccatg	tcccagaccc	agcctgac	ggaccac	tactctccgc	840
caccgcctcc	tcctcctt	at	tcggctgtg	caggagac	ccttcgt	900
tcctgtcagc	agccaccacc	tccac	cctctctggc	ctacccacca	cctccttc	960
atccatcccc	caagccagcc	acggacccag	gtctctccc	aatgatccca	gactatcctg	1020
gatttttcc	atctcagtgc	cagagagacc	tacatgg	actggccca	gaccgt	1080
ccttcctc	cccactggac	accctgcgg	tgccccctcc	actca	ctcttacaa	1140
tccgttaactt	taccctgggg	ggccccagtg	ctgggggtgac	cg	gaccagagg	1200
gcagcgaggg	accccggt	cctggtagca	gctcagc	agcagcagcc	gccgcgc	1260
ccgcctataa	cccacaccac	ctgca	ggcccattct	gaggcctcg	aagtacccca	1320
acagacccag	caagaccccg	gtgcacgaga	ggccctaccc	gtgcccagca	gaaggctcg	1380
acccgcgtt	ctcccgtct	gacgagctga	cacggcacat	ccgaatccac	actggcata	1440
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atatccgcac	ccacacccgt	gagaaggc	tcgcctgt	ctactgtgg	cgaaagt	1560
cccgaggt	tgagagga	cgccacacca	agatccac	gagacagaa	gagcgaaaa	1620
gcagtgc	ctctgc	gtgcagcc	cctctacagc	ctcctgtct	ggggcgt	1680
agcctgggg	taccctgtgc	agcagtaaca	gcagc	tgccggaggg	ccgctcg	1740
cttgctc	tcggacccgg	acac	tttgc	gataca	ccagctccca	1800
aagtcccg	aggccctt	tccactggag	ctgcaca	aa	cccttc	1860
tccctctc	cctt	tttgc	gataca	cccttc	cac	1920
ctagaagcag	gttctt	tttgc	gataca	cccttc	cac	1980
tcaacccaag	gcaaa	tttgc	gataca	cccttc	cac	2040

gctgaggctc	gaccctgctt	taaagggttg	tttgactagg	tttgctacc	ccacttcccc	2100
ttatggac	ccatcacagg	ttttgaccc	tggatgtcag	agttgatcta	agacgtttc	2160
tacaataggt	tgggagatgc	tgatcccttc	aagtggggac	agcaaaaaga	caagcaaaac	2220
tgtatgtcac	tttatggctt	gggactgatt	tggggacat	tgtacagtga	gtgaagtata	2280
gccttatgc	cacactctgt	ggccctaaaa	tggtaatca	gagcatatct	agttgtctca	2340
acccttgaag	caatatgtat	tataaactca	gagaacagaa	gtgcaatgtg	atgggaggaa	2400
catacgaaata	tctgctcctt	ttcgagttgt	ttgagaaatg	taggctattt	tttcagtgta	2460
tatccactca	gattttgtgt	attttgcgt	tacactgttc	tctaaattct	gaatcttgg	2520
aaaaaaatgt	aaagcattta	tgatctcaga	ggtaactta	tttaaggggg	atgtacatat	2580
attctctgaa	actaggatgc	atgcaattgt	gttggaaagt	tccttggtgc	cttgcgtgat	2640
gtagacaatg	ttacaaggtc	tccatgtaaa	tgggtgcct	tattatggag	aaaaaaatca	2700
ctccctgagt	ttatgtatggc	tgtatatttc	tgcctattaa	tatttggaaat	tttttttaga	2760
aagtatattt	ttgtatgtctt	tggtttgtga	cttaaaagt	ttaccttgc	agtcaaattt	2820
cagataagaa	tgtacataat	gttacccggag	ctgattgtt	tggtcattag	ctcttaatag	2880
ttgtgaa						2887

<210> 35
 <211> 488
 <212> PRT
 <213> Homo Sapien

<400> 35
 Arg Gly Ser Trp Val Ser Arg Leu Cys Glu Glu Gln Met Met Thr Ala
 1 5 10 15
 Lys Ala Val Asp Lys Ile Pro Val Thr Leu Ser Gly Phe Val His Gln
 20 25 30
 Leu Ser Asp Asn Ile Tyr Pro Val Glu Asp Leu Ala Ala Thr Ser Val
 35 40 45
 Thr Ile Phe Pro Asn Ala Glu Leu Gly Gly Pro Phe Asp Gln Met Asn
 50 55 60
 Gly Val Ala Gly Asp Gly Met Ile Asn Ile Asp Met Thr Gly Glu Lys
 65 70 75 80
 Arg Ser Leu Asp Leu Pro Tyr Pro Ser Ser Phe Ala Pro Val Ser Ala
 85 90 95
 Pro Arg Asn Gln Thr Phe Thr Tyr Met Gly Lys Phe Ser Ile Asp Pro
 100 105 110
 Gln Tyr Pro Gly Ala Ser Cys Tyr Pro Glu Gly Ile Ile Asn Ile Val
 115 120 125
 Ser Ala Gly Ile Leu Gln Gly Val Thr Ser Pro Ala Ser Thr Thr Ala
 130 135 140
 Ser Ser Ser Val Thr Ser Ala Ser Pro Asn Pro Leu Ala Thr Gly Pro
 145 150 155 160
 Leu Gly Val Cys Thr Met Ser Gln Thr Gln Pro Asp Leu Asp His Leu
 165 170 175
 Tyr Ser Pro Pro Pro Pro Pro Tyr Ser Gly Cys Ala Gly Asp
 180 185 190
 Leu Tyr Gln Asp Pro Ser Ala Phe Leu Ser Ala Ala Thr Thr Ser Thr
 195 200 205
 Ser Ser Ser Leu Ala Tyr Pro Pro Pro Ser Tyr Pro Ser Pro Lys
 210 215 220
 Pro Ala Thr Asp Pro Gly Leu Phe Pro Met Ile Pro Asp Tyr Pro Gly
 225 230 235 240
 Phe Phe Pro Ser Gln Cys Gln Arg Asp Leu His Gly Thr Ala Gly Pro
 245 250 255
 Asp Arg Lys Pro Phe Pro Cys Pro Leu Asp Thr Leu Arg Val Pro Pro

260	265	270	
Pro Leu Thr Pro Leu Ser Thr Ile Arg Asn Phe Thr Leu Gly Gly Pro			
275	280	285	
Ser Ala Gly Val Thr Gly Pro Gly Ala Ser Gly Gly Ser Glu Gly Pro			
290	295	300	
Arg Leu Pro Gly Ser Ser Ser Ala Ala Ala Ala Ala Ala Ala Ala			
305	310	315	320
Ala Tyr Asn Pro His His Leu Pro Leu Arg Pro Ile Leu Arg Pro Arg			
325	330	335	
Lys Tyr Pro Asn Arg Pro Ser Lys Thr Pro Val His Glu Arg Pro Tyr			
340	345	350	
Pro Cys Pro Ala Glu Gly Cys Asp Arg Arg Phe Ser Arg Ser Asp Glu			
355	360	365	
Leu Thr Arg His Ile Arg Ile His Thr Gly His Lys Pro Phe Gln Cys			
370	375	380	
Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His Leu Thr Thr His			
385	390	395	400
Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Tyr Cys Gly			
405	410	415	
Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys Ile His			
420	425	430	
Leu Arg Gln Lys Glu Arg Lys Ser Ser Ala Pro Ser Ala Ser Val Pro			
435	440	445	
Ala Pro Ser Thr Ala Ser Cys Ser Gly Gly Val Gln Pro Gly Gly Thr			
450	455	460	
Leu Cys Ser Ser Asn Ser Ser Ser Leu Gly Gly Pro Leu Ala Pro			
465	470	475	480
Cys Ser Ser Arg Thr Arg Thr Pro			
485			

<210> 36
 <211> 300
 <212> DNA
 <213> Homo Sapien

<400> 36
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 ggcagtgggt acttcgatgt gagggacaag gaggaccagt ggatccggat cttcatggag 120
 aaggagaca tggtgacgct ccccgcgggg atctatcacc gttcacggg ggacgagaag 180
 aactacacga aggccatgcg gctgttgtg ggagaaccgg tggacagc gtacaaccgg 240
 cccgctgacc atttgaagc ccgcggcag tacgtaaaat ttctggcaca gaccgcctag 300

<210> 37
 <211> 99
 <212> PRT
 <213> Homo Sapien

<400> 37
 Ile Lys Met Phe Tyr Glu Glu His Leu His Leu Asp Asp Glu Ile Arg
 1 5 10 15
 Tyr Ile Leu Asp Gly Ser Gly Tyr Phe Asp Val Arg Asp Lys Glu Asp
 20 25 30
 Gln Trp Ile Arg Ile Phe Met Glu Lys Gly Asp Met Val Thr Leu Pro
 35 40 45
 Ala Gly Ile Tyr His Arg Phe Thr Val Asp Glu Lys Asn Tyr Thr Lys

50	55	60	
Ala Met Arg Leu Phe Val	Gly Glu Pro Val	Trp Thr Ala Tyr Asn Arg	
65	70	75	80
Pro Ala Asp His Phe Glu Ala Arg Gly Gln	Tyr Val Lys Phe Leu Ala		
	85	90	95
Gln Thr Ala			

<210> 38
<211> 2404
<212> DNA
<213> Homo Sapien

<400> 38

<210> 39
<211> 278
<212> PRT
<213> Homo Sapien

<400> 39

His Arg Arg His Phe Pro Asn Cys Phe Phe Val Leu Gly Arg Asn Leu
1 5 10 15

Asn Ile Arg Ser Glu Ser Asp Ala Val Ser Ser Asp Arg Asn Phe Pro
20 25 30

Asn Ser Thr Asn Leu Pro Arg Asn Pro Ser Met Ala Asp Tyr Glu Ala
35 40 45

Arg Ile Phe Thr Phe Gly Thr Trp Ile Tyr Ser Val Asn Lys Glu Gln
50 55 60

Leu Ala Arg Ala Gly Phe Tyr Ala Leu Gly Glu Gly Asp Lys Val Lys
65 70 75 80

Cys Phe His Cys Gly Gly Leu Thr Asp Trp Lys Pro Ser Glu Asp
85 90 95

Pro Trp Glu Gln His Ala Lys Trp Tyr Pro Gly Cys Lys Tyr Leu Leu
100 105 110

Glu Gln Lys Gly Gln Glu Tyr Ile Asn Asn Ile His Leu Thr His Ser
115 120 125

Leu Glu Glu Cys Leu Val Arg Thr Thr Glu Lys Thr Pro Ser Leu Thr
130 135 140

Arg Arg Ile Asp Asp Thr Ile Phe Gln Asn Pro Met Val Gln Glu Ala
145 150 155 160

Ile Arg Met Gly Phe Ser Phe Lys Asp Ile Lys Lys Ile Met Glu Glu
165 170 175

Lys Ile Gln Ile Ser Gly Ser Asn Tyr Lys Ser Leu Glu Val Leu Val
180 185 190

Ala Asp Leu Val Asn Ala Gln Lys Asp Ser Met Gln Asp Glu Ser Ser
195 200 205

Gln Thr Ser Leu Gln Lys Glu Ile Ser Thr Glu Glu Gln Leu Arg Arg
210 215 220

Leu Gln Glu Glu Lys Leu Cys Lys Ile Cys Met Asp Arg Asn Ile Ala
225 230 235 240

Ile Val Phe Val Pro Cys Gly His Leu Val Thr Cys Lys Gln Cys Ala
245 250 255

Glu Ala Val Asp Lys Cys Pro Met Cys Tyr Thr Val Ile Thr Phe Lys
260 265 270

Gln Lys Ile Phe Met Ser
275

<210> 40
<211> 2409
<212> DNA
<213> Homo Sapien

<400> 40

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gtggagccgg ccgcccaga gctgttcgag gcgtgcgcga acggggacgt ggaacgagtc 120
aagaggctgg tgacgcctga gaaggtgaac agccgcgaca cggcgggcag gaaatccacc 180
ccgctgcact tcgcccgcagg ttttggcgg aaagacgtag ttgaatattt gcttcagaat 240
ggtgcaaatg tccaaggcagc tgatgtatggg ggccttattc ctcttcataa tgcatgctct 300

tttggtcatg ctgaagtagt caatctcattt ttgcgcacatg gtgcagaccc caatgctcga 360
 gataaattgga attatactcc tctccatgaa gctgcaatta aaggaaagat ttagtgc 420
 attgtgctgt tacagcatgg agctgagcca accatccgaa atacagatgg aaggacagca 480
 ttggatttag cagatccatc tgccaaagca gtgcttactg gtaagtctgt atactctggt 540
 tattccagga agcctgtaaa gaacaaccc ttgcaggatg gcaatgaaga aaaaatgtg 600
 gctctactca caccataaa tgtcaactgc caccgaaatg atggcagaaa gcatgggcc 660
 tggtaaatg caatggactt gtggcaattt actccttc atgaggcagc ttctaagaac 720
 agggttgaag tatgttctt tctcttaagt tatggtcag accaaacact gctcaattgt 780
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 cttctgctcc agcatggtgc agaccctaca aaaaaaaaaa gggatggaaa tactcctt 1320
 gatcttgc ttatggaga tacagatatt caagatctgc tttagggaga tgcagctt 1380
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 gtaatttgcc gcgataacca aggcagacat tcaacaccc tacatggc agctggtt 1500
 aataatttag aagttgcaga gtatggta caacacggag ctgatgtgaa tgcccaagac 1560
 aaaggaggac ttattccctt acataatgca gcatcttacg ggttactt ggttactt 1620
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 ctatggaaa gatacactca cggagaaaaa gaagttctg aagaaaacca caaccatgcc 1980
 aatgaacgaa tgcttatttca tgggtcttcc ttgttgcattt caattatcca caaaggctt 2040
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 aagtcttcc tgcagttcag tgcattatggc atggcacatt ctccctccagg tcatcactca 2280
 gtcaactggta gcccagttt aaatggccta gcatggctg aatatgttac ttacagagga 2340
 gaacaggctt atccctgatg ttaattact taccagatta tgaggcctga aggtatggc 2400
 gatggataa 2409

<210> 41
 <211> 802
 <212> PRT
 <213> Homo Sapien

<400> 41
 Met Ser Gly Arg Arg Cys Ala Gly Gly Gly Ala Ala Cys Ala Ser Ala
 1 5 10 15
 Ala Ala Glu Ala Val Glu Pro Ala Ala Arg Glu Leu Phe Glu Ala Cys
 20 25 30
 Arg Asn Gly Asp Val Glu Arg Val Lys Arg Leu Val Thr Pro Glu Lys
 35 40 45
 Val Asn Ser Arg Asp Thr Ala Gly Arg Lys Ser Thr Pro Leu His Phe
 50 55 60
 Ala Ala Gly Phe Gly Arg Lys Asp Val Val Glu Tyr Leu Leu Gln Asn
 65 70 75 80
 Gly Ala Asn Val Gln Ala Arg Asp Asp Gly Gly Leu Ile Pro Leu His
 85 90 95

Asn Ala Cys Ser Phe Gly His Ala Glu Val Val Asn Leu Leu Leu Arg
 100 105 110
 His Gly Ala Asp Pro Asn Ala Arg Asp Asn Trp Asn Tyr Thr Pro Leu
 115 120 125
 His Glu Ala Ala Ile Lys Gly Lys Ile Asp Val Cys Ile Val Leu Leu
 130 135 140
 Gln His Gly Ala Glu Pro Thr Ile Arg Asn Thr Asp Gly Arg Thr Ala
 145 150 155 160
 Leu Asp Leu Ala Asp Pro Ser Ala Lys Ala Val Leu Thr Gly Lys Ser
 165 170 175
 Val Tyr Ser Gly Tyr Ser Arg Lys Pro Val Lys Asn Asn Leu Ala Arg
 180 185 190
 Ser Gly Asn Glu Glu Lys Met Met Ala Leu Leu Thr Pro Leu Asn Val
 195 200 205
 Asn Cys His Ala Ser Asp Gly Arg Lys His Gly Ala Cys Val Asn Ala
 210 215 220
 Met Asp Leu Trp Gln Phe Thr Pro Leu His Glu Ala Ala Ser Lys Asn
 225 230 235 240
 Arg Val Glu Val Cys Ser Leu Leu Leu Ser Tyr Gly Ala Asp Pro Thr
 245 250 255
 Leu Leu Asn Cys His Asn Lys Ser Ala Ile Asp Leu Ala Pro Thr Pro
 260 265 270
 Gln Leu Lys Glu Arg Leu Ala Tyr Glu Phe Lys Gly His Ser Leu Leu
 275 280 285
 Gln Ala Ala Arg Glu Ala Asp Val Thr Arg Ile Lys Lys His Leu Ser
 290 295 300
 Leu Glu Met Val Asn Phe Lys His Pro Gln Thr His Glu Thr Ala Leu
 305 310 315 320
 Lys Leu Cys Thr Val Gln Ser Val Asn Cys Arg Asp Ile Glu Gly Arg
 325 330 335
 Gln Ser Thr Pro Leu His Phe Ala Ala Gly Tyr Asn Arg Val Ser Val
 340 345 350
 Val Glu Tyr Leu Leu Gln His Gly Ala Asp Val His Ala Lys Asp Lys
 355 360 365
 Gly Gly Leu Val Pro Leu His Asn Ala Cys Ser Tyr Gly His Tyr Glu
 370 375 380
 Val Ala Glu Leu Leu Val Lys His Gly Ala Val Val Asn Val Ala Asp
 385 390 395 400
 Leu Trp Lys Phe Thr Pro Leu His Glu Ala Ala Ala Lys Gly Lys Tyr
 405 410 415
 Glu Ile Cys Lys Leu Leu Gln His Gly Ala Asp Pro Thr Lys Lys
 420 425 430
 Asn Arg Asp Gly Asn Thr Pro Leu Asp Leu Val Lys Asp Gly Asp Thr
 435 440 445
 Asp Ile Gln Asp Leu Leu Arg Gly Asp Ala Ala Leu Leu Asp Ala Ala
 450 455 460
 Lys Lys Gly Cys Leu Ala Arg Val Lys Lys Leu Ser Ser Pro Asp Asn
 465 470 475 480
 Val Asn Cys Arg Asp Thr Gln Gly Arg His Ser Thr Pro Leu His Leu
 485 490 495
 Ala Ala Gly Tyr Asn Asn Leu Glu Val Ala Glu Tyr Leu Leu Gln His
 500 505 510
 Gly Ala Asp Val Asn Ala Gln Asp Lys Gly Gly Leu Ile Pro Leu His
 515 520 525
 Asn Ala Ala Ser Tyr Gly Ile Thr Leu Asp Val Leu Val Glu Met Gly

530	535	540
His Lys Glu Leu Lys Glu Ile Gly Ile Asn Ala Tyr Gly His Arg His		
545	550	555
Lys Leu Ile Lys Gly Val Glu Arg Leu Ile Ser Gly Gln Gln Gly Leu		560
565	570	575
Asn Pro Tyr Leu Thr Leu Asn Thr Ser Gly Ser Gly Thr Ile Leu Ile		
580	585	590
Asp Leu Ser Pro Asp Asp Lys Glu Phe Gln Ser Val Glu Glu Glu Met		
595	600	605
Gln Ser Thr Val Arg Glu His Arg Asp Gly Gly His Ala Gly Gly Ile		
610	615	620
Phe Asn Arg Tyr Asn Ile Leu Lys Ile Gln Lys Val Cys Asn Lys Lys		
625	630	635
640		
Leu Trp Glu Arg Tyr Thr His Arg Arg Lys Glu Val Ser Glu Glu Asn		
645	650	655
His Asn His Ala Asn Glu Arg Met Leu Phe His Gly Ser Pro Phe Val		
660	665	670
Asn Ala Ile Ile His Lys Gly Phe Asp Glu Arg His Ala Tyr Ile Gly		
675	680	685
Gly Met Phe Gly Ala Gly Ile Tyr Phe Ala Glu Asn Ser Ser Lys Ser		
690	695	700
Asn Gln Tyr Val Tyr Gly Ile Gly Gly Thr Gly Cys Pro Val His		
705	710	715
720		
Lys Asp Arg Ser Cys Tyr Ile Cys His Arg Gln Leu Leu Phe Cys Arg		
725	730	735
Val Thr Leu Gly Lys Ser Phe Leu Gln Phe Ser Ala Met Lys Met Ala		
740	745	750
His Ser Pro Pro Gly His His Ser Val Thr Gly Arg Pro Ser Val Asn		
755	760	765
Gly Leu Ala Leu Ala Glu Tyr Val Ile Tyr Arg Gly Glu Gln Ala Tyr		
770	775	780
Pro Glu Tyr Leu Ile Thr Tyr Gln Ile Met Arg Pro Glu Gly Met Val		
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Asp Gly		800

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<210> 42
<211> 5175
<212> DNA
<213> Homo Sapien
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<400> 42
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caccttgc ttccaaagaagg ccatgttagag gttgtttctg agctgctgca gagagaagcc
aatgtggatg cagctacaaa gaaagggaaac acagcattgc acatgcattt tttggctggg
caagcagagg tggtaaaagt cttggttaca aatggagcca atgtcaatgc acaatctcag
aatggttca cgccattgtt tatggcagcc caggaaaatc acctgaaatgt tgcaggatgtt
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cacatggcca cacaaggggc tcatttaaac tgcttcagc ttctccttca gcataatgttgc	960
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cattacaaag ttgccaaggt tctcttggat aagaaagcta accccaatgc caaagccctg	1080
aatggcttta cccctttca tattgcctgc aagaagaatc gaattaaagt aatggaactc	1140
cttctgaaac acgggtgcac catccaagct gtaaccgaga gaggagaaac agcactgcac	1200
atggcagctc gctccggcca agctgaagtt gtgcggatc tggtacaaga cggagotcag	1260
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gttagcttta tgggtggacgc gagagggggc tccatgagag gaagccgtca tcacggatg	2460
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gaaacttggaa aggagcatca gtttgcacgc aaaaatgaag atttaaccga gttacttaat	2760
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atcacgaaag attccccca gtatttgcga gtggtttccc ggattaagca ggaaagcaac	2880
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gatgtatgt agagccagtt ggagaatgta tgtctgatgt agtacccatca ataccttggaa	4320
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agtaccaagg aaactctgaa accaaaaata catggatctg gtcatgttga agaaccagca	4860
tcaccactag cagcatatca gaaatctcta gaagaaacca gcaagcttat aatagaagag	4920
actaaaccct gtgtgcctga cttgaaagac agttagatgtt attcagctc agaggaagag	4980
cggagagtca ctacccgagt tattcgccgg cgtttgat taaagggaga ggaagcaaaa	5040
aacattcctg gtgaatctgt cacagaagaa caatttactg atgaagaagg caacccatc	5100
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aagagccact cgtaa	5175

<210> 43
 <211> 1724
 <212> PRT
 <213> Homo Sapien

<400> 43
 Ser Asp Ala Asn Ala Ser Tyr Leu Arg Ala Ala Arg Ala Gly His Leu
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 Glu Lys Ala Leu Asp Tyr Ile Lys Asn Gly Val Asp Ile Asn Ile Cys
 20 25 30
 Asn Gln Asn Gly Leu Asn Ala Leu His Leu Ala Ser Lys Glu Gly His
 35 40 45
 Val Glu Val Val Ser Glu Leu Leu Gln Arg Glu Ala Asn Val Asp Ala
 50 55 60
 Ala Thr Lys Lys Gly Asn Thr Ala Leu His Ile Ala Ser Leu Ala Gly
 65 70 75 80
 Gln Ala Glu Val Val Lys Val Leu Val Thr Asn Gly Ala Asn Val Asn
 85 90 95
 Ala Gln Ser Gln Asn Gly Phe Thr Pro Leu Tyr Met Ala Ala Gln Glu
 100 105 110
 Asn His Leu Glu Val Val Lys Phe Leu Leu Asp Asn Gly Ala Ser Gln
 115 120 125
 Ser Leu Ala Thr Glu Asp Gly Phe Thr Pro Leu Ala Val Ala Leu Gln
 130 135 140
 Gln Gly His Asp Gln Val Val Ser Leu Leu Leu Glu Asn Asp Thr Lys
 145 150 155 160
 Gly Lys Val Arg Leu Pro Ala Leu His Ile Ala Ala Arg Lys Asp Asp
 165 170 175
 Thr Lys Ala Ala Ala Leu Leu Leu Gln Asn Asp Asn Asn Ala Asp Val
 180 185 190
 Glu Ser Lys Ser Gly Phe Thr Pro Leu His Ile Ala Ala His Tyr Gly
 195 200 205
 Asn Ile Asn Val Ala Thr Leu Leu Leu Asn Arg Ala Ala Ala Val Asp

210	215	220
Phe Thr Ala Arg Asn Asp Ile Thr Pro Leu His Val Ala Ser Lys Arg		
225	230	235
Gly Asn Ala Asn Met Val Lys Leu Leu Leu Asp Arg Gly Ala Lys Ile		240
245	250	255
Asp Ala Lys Thr Arg Asp Gly Leu Thr Pro Leu His Cys Gly Ala Arg		
260	265	270
Ser Gly His Glu Gln Val Val Glu Met Leu Leu Asp Arg Ala Ala Pro		
275	280	285
Ile Leu Ser Lys Thr Lys Asn Gly Leu Ser Pro Leu His Met Ala Thr		
290	295	300
Gln Gly Asp His Leu Asn Cys Val Gln Leu Leu Leu Gln His Asn Val		
305	310	315
Pro Val Asp Asp Val Thr Asn Asp Tyr Leu Thr Ala Leu His Val Ala		
325	330	335
Ala His Cys Gly His Tyr Lys Val Ala Lys Val Leu Leu Asp Lys Lys		
340	345	350
Ala Asn Pro Asn Ala Lys Ala Leu Asn Gly Phe Thr Pro Leu His Ile		
355	360	365
Ala Cys Lys Lys Asn Arg Ile Lys Val Met Glu Leu Leu Leu Lys His		
370	375	380
Gly Ala Ser Ile Gln Ala Val Thr Glu Arg Gly Glu Thr Ala Leu His		
385	390	395
Met Ala Ala Arg Ser Gly Gln Ala Glu Val Val Arg Tyr Leu Val Gln		
405	410	415
Asp Gly Ala Gln Val Glu Ala Lys Ala Lys Asp Asp Gln Thr Pro Leu		
420	425	430
His Ile Ser Ala Arg Leu Gly Lys Ala Asp Ile Val Gln Gln Leu Leu		
435	440	445
Gln Gln Gly Ala Ser Pro Asn Ala Ala Thr Thr Ser Gly Tyr Thr Pro		
450	455	460
Leu His Leu Ser Ala Arg Glu Gly His Glu Asp Val Ala Ala Phe Leu		
465	470	475
Leu Asp His Gly Ala Ser Leu Ser Ile Thr Thr Lys Ser Gly Leu Thr		
485	490	495
Pro Leu His Val Ala Ala His Tyr Asp Asn Gln Lys Val Ala Leu Leu		
500	505	510
Leu Leu Asp Gln Gly Ala Ser Pro His Ala Ala Ala Lys Asn Gly Tyr		
515	520	525
Thr Pro Leu His Ile Ala Ala Lys Lys Asn Gln Met Asp Ile Ala Thr		
530	535	540
Thr Leu Leu Glu Tyr Gly Ala Asp Ala Asn Ala Val Thr Arg Gln Gly		
545	550	555
Ile Ala Ser Val His Leu Ala Ala Gln Glu Gly His Val Asp Met Val		
565	570	575
Ser Leu Leu Leu Gly Arg Asn Ala Asn Val Asn Leu Ser Asn Lys Ser		
580	585	590
Gly Leu Thr Pro Leu His Leu Ala Ala Gln Glu Asp Arg Val Asn Val		
595	600	605
Ala Glu Val Leu Val Asn Gln Gly Ala His Val Asp Ala Gln Thr Lys		
610	615	620
Val Tyr Gly Pro Pro Leu Pro His Gly Lys Glu Cys Val His Leu Val		
625	630	635
Thr Ala Asn Gly Tyr Thr Pro Leu His Gln Ala Ala Gln Gln Gly His		
645	650	655

Thr His Ile Ile Asn Val Leu Leu Gln Asn Asn Ala Ser Pro Asn Glu
 660 665 670
 Leu Thr Val Thr Val Thr Glu Lys His Lys Met Asn Val Pro Glu Thr
 675 680 685
 Met Asn Glu Val Leu Asp Met Ser Asp Asp Glu Val Arg Lys Ala Asn
 690 695 700
 Ala Pro Glu Met Leu Ser Asp Gly Glu Tyr Ile Ser Asp Val Glu Glu
 705 710 715 720
 Gly Asn Arg Cys Thr Trp Tyr Lys Ile Pro Lys Val Gln Glu Phe Thr
 725 730 735
 Val Lys Thr Asp Thr Phe Lys Arg Glu Ala Phe Asp Val Gly Leu Leu
 740 745 750
 Ser Thr Ser Ala Gly Glu Asp Ala Met Thr Gly Asp Thr Asp Lys Tyr
 755 760 765
 Leu Gly Pro Gln Asp Leu Lys Glu Leu Gly Asp Asp Ser Leu Pro Ala
 770 775 780
 Glu Gly Tyr Met Gly Phe Ser Leu Gly Ala Arg Ser Ala Arg Phe Leu
 785 790 795 800
 Val Ser Phe Met Val Asp Ala Arg Gly Ser Met Arg Gly Ser Arg
 805 810 815
 His His Gly Met Arg Ile Ile Pro Pro Arg Lys Cys Thr Ala Pro
 820 825 830
 Thr Arg Ile Thr Cys Arg Leu Val Lys Arg His Lys Leu Ala Asn Pro
 835 840 845
 Pro Pro Met Val Glu Gly Glu Gly Leu Ala Ser Arg Leu Val Glu Met
 850 855 860
 Gly Pro Ala Gly Ala Gln Phe Leu Gly Pro Val Ile Val Glu Ile Pro
 865 870 875 880
 His Phe Gly Ser Met Arg Gly Lys Glu Arg Glu Leu Ile Val Leu Arg
 885 890 895
 Ser Glu Asn Gly Glu Thr Trp Lys Glu His Gln Phe Asp Ser Lys Asn
 900 905 910
 Glu Asp Leu Thr Glu Leu Leu Asn Gly Met Asp Glu Glu Leu Asp Ser
 915 920 925
 Pro Glu Glu Leu Gly Lys Arg Ile Cys Arg Ile Ile Thr Lys Asp
 930 935 940
 Phe Pro Gln Tyr Phe Ala Val Val Ser Arg Ile Lys Gln Glu Ser Asn
 945 950 955 960
 Gln Ile Gly Pro Glu Gly Gly Ile Leu Ser Ser Thr Thr Val Pro Leu
 965 970 975
 Val Gln Ala Ser Phe Pro Glu Gly Ala Leu Thr Lys Arg Ile Arg Val
 980 985 990
 Gly Leu Gln Ala Gln Pro Val Pro Asp Glu Ile Val Lys Lys Ile Leu
 995 1000 1005
 Gly Asn Lys Ala Thr Phe Ser Pro Ile Val Thr Val Glu Pro Arg Arg
 1010 1015 1020
 Arg Lys Phe His Lys Pro Ile Thr Met Thr Ile Pro Val Pro Pro Pro
 1025 1030 1035 1040
 Ser Gly Glu Gly Val Ser Asn Gly Tyr Lys Gly Asp Thr Thr Pro Asn
 1045 1050 1055
 Leu Arg Leu Leu Cys Ser Ile Thr Gly Gly Thr Ser Pro Ala Gln Trp
 1060 1065 1070
 Glu Asp Ile Thr Gly Thr Thr Pro Leu Thr Phe Ile Lys Asp Cys Val
 1075 1080 1085
 Ser Phe Thr Thr Asn Val Ser Ala Arg Tyr Gly Asn Lys Gly Phe Gln

1090	1095	1100	
Lys Ala Val Leu Glu Gly Lys Pro Ile Tyr Val Asp Cys Tyr Gly Asn			
1105	1110	1115	1120
Leu Ala Pro Leu Thr Lys Gly Gly Gln Gln Leu Val Phe Asn Phe Tyr			
1125	1130	1135	
Ser Phe Lys Glu Asn Arg Leu Pro Phe Ser Ile Lys Ile Arg Asp Thr			
1140	1145	1150	
Ser Gln Glu Pro Cys Gly Arg Leu Ser Phe Leu Lys Glu Pro Lys Thr			
1155	1160	1165	
Thr Lys Gly Leu Pro Gln Thr Ala Val Cys Asn Leu Asn Ile Thr Leu			
1170	1175	1180	
Pro Ala His Lys Lys Ile Glu Lys Thr Asp Arg Arg Gln Ser Phe Ala			
1185	1190	1195	1200
Ser Leu Ala Leu Arg Lys Arg Tyr Ser Tyr Leu Thr Glu Pro Gly Met			
1205	1210	1215	
Lys Glu Lys Lys Met Gln Ser Glu Leu Ser Asp Glu Glu Ser Thr			
1220	1225	1230	
Ser Arg Asn Thr Ser Leu Ser Glu Thr Ser Arg Gly Gly Gln Pro Ser			
1235	1240	1245	
Val Thr Thr Lys Ser Ala Arg Asp Lys Lys Thr Glu Ala Ala Pro Leu			
1250	1255	1260	
Lys Ser Lys Ser Glu Lys Ala Gly Ser Glu Lys Arg Ser Ser Arg Arg			
1265	1270	1275	1280
Thr Ala Asp Ala Leu Thr Ser Val Leu Thr Lys Ile Asn Arg Ile Asp			
1285	1290	1295	
Ile Val Thr Leu Leu Glu Gly Pro Ile Phe Asp Tyr Gly Asn Ile Ser			
1300	1305	1310	
Gly Thr Arg Ser Phe Ala Asp Glu Asn Asn Val Phe His Asp Pro Val			
1315	1320	1325	
Asp Gly Tyr Pro Ser Leu Gln Val Glu Leu Glu Thr Pro Thr Gly Leu			
1330	1335	1340	
His Tyr Thr Pro Pro Thr Pro Phe Gln Gln Asp Asp Tyr Phe Ser Asp			
1345	1350	1355	1360
Ile Ser Ser Ile Glu Ser Pro Leu Arg Thr Pro Ser Arg Leu Ser Asp			
1365	1370	1375	
Gly Leu Val Pro Ser Gln Gly Asn Ile Glu His Ser Ala Asp Gly Pro			
1380	1385	1390	
Pro Val Val Thr Ala Glu Asp Ala Ser Leu Glu Asp Ser Lys Leu Glu			
1395	1400	1405	
Asp Ser Val Pro Leu Thr Glu Met Pro Glu Ala Val Asp Val Asp Glu			
1410	1415	1420	
Ser Gln Leu Glu Asn Val Cys Leu Ser Glu Tyr Pro Gln Tyr Leu Gly			
1425	1430	1435	1440
Asn Leu Ala Gly Ser Pro Lys Asp Val Lys Pro Ala Glu Pro Arg Lys			
1445	1450	1455	
Leu Gly Val Ser Ser Glu Gln Gln Glu Lys Gly Lys Ser Gly Pro Asp			
1460	1465	1470	
Glu Glu Met Met Glu Glu Lys Leu Lys Ser Leu Phe Glu Asp Ile Gln			
1475	1480	1485	
Leu Glu Glu Gly Val Glu Ser Glu Glu Met Thr Glu Glu Lys Val Gln			
1490	1495	1500	
Ala Ile Leu Lys Arg Val Gln Gln Ala Glu Leu Glu Met Ser Ser Ile			
1505	1510	1515	1520
Thr Gly Trp Gln Asn Glu Thr Ser Ser Gly Asn Leu Glu Ser Cys Ala			
1525	1530	1535	

Gln Ala Arg Arg Val Thr Gly Gly Leu Leu Asp Arg Leu Asp Asp Ser
 1540 1545 1550
 Pro Asp Gln Cys Arg Asp Ser Ile Thr Ser Tyr Leu Lys Gly Glu Ala
 1555 1560 1565
 Gly Lys Phe Glu Ala Asn Gly Ser His Thr Glu Ile Thr Pro Glu Ala
 1570 1575 1580
 Lys Thr Lys Ser Tyr Phe Pro Glu Ser Gln Asn Asp Val Gly Lys Gln
 1585 1590 1595 1600
 Ser Thr Lys Glu Thr Leu Lys Pro Lys Ile His Gly Ser Gly His Val
 1605 1610 1615
 Glu Glu Pro Ala Ser Pro Leu Ala Ala Tyr Gln Lys Ser Leu Glu Glu
 1620 1625 1630
 Thr Ser Lys Leu Ile Ile Glu Glu Thr Lys Pro Cys Val Pro Asp Leu
 1635 1640 1645
 Lys Asp Ser Glu Ser Asp Ser Ser Ser Glu Glu Glu Arg Arg Val Thr
 1650 1655 1660
 Thr Arg Val Ile Arg Arg Arg Leu Ile Ile Lys Gly Glu Glu Ala Lys
 1665 1670 1675 1680
 Asn Ile Pro Gly Glu Ser Val Thr Glu Glu Gln Phe Thr Asp Glu Glu
 1685 1690 1695
 Gly Asn Leu Ile Thr Arg Lys Gly Glu Gly Phe Lys Val Lys Thr Lys
 1700 1705 1710
 Lys Glu Ile Arg His Val Glu Lys Lys Ser His Ser
 1715 1720

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<210> 44
<211> 1305
<212> DNA
<213> Homo Sapien
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<400> 44
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agcggcgccgc acgagaagtt tatgacatca gggtttaaag acaagaatc aacctgttag
acaaaggaaac aggagccaaa attgggtaaa cccaagaaaa agagaagaaa aaagtcagtc
tatactgttag gcctgagagg gctaataat cttgggaaca cttgtttat gaattgtatt
gtccaggcac ttacccatatac tcctctactg aaagatttct tcctctctga caagcacaaaa
tgtataatga caagccccag cttgtgtctg gtcgtgaaa tgtctcgct ttttcatgt
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aggccagagc accttaggaag cagtgcacaaa atcaaatgcata atagttgcac aagctaccag
gagtctacta aacagctcac aatgaaaaaa ttacccatgg tggctgttt tcatctcaag
cggtttaggc atgtaggcaa acagaggcga aagattaata cctttatctc ctttcccttgc
gagctggaca tgactccgtt tttggcctt actaaagaga gcagaatgaa agaaggccag
ccaccaacag attgtgtgcc caatgagaat aagtattcct tggttgcagt gattaatcac
catggaaactt tgaaaagtgg ccactatacc agcttcatcc ggcaacaaaa ggaccagtgg
ttcagctgtatgatgccc catcaccatgc gtcaccatttgg aggacttactt ctacagtggaa
gggttattac tggcttatca caaacagggtt ctagagaaag acttag

<210> 45

<211> 434
<212> PRT
<213> Homo Sapien

<400> 45
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Ala Glu Glu Met Lys Leu Glu Pro Leu Gln Glu Arg Glu Pro Ala Pro
20 25 30
Glu Glu Asn Leu Thr Trp Ser Ser Gly Gly Asp Glu Lys Phe Met
35 40 45
Thr Ser Gly Phe Glu Asp Lys Gln Ser Thr Cys Glu Thr Lys Glu Gln
50 55 60
Glu Pro Lys Leu Val Lys Pro Lys Lys Arg Arg Lys Lys Ser Val
65 70 75 80
Tyr Thr Val Gly Leu Arg Gly Leu Ile Asn Leu Gly Asn Thr Cys Phe
85 90 95
Met Asn Cys Ile Val Gln Ala Leu Thr His Ile Pro Leu Leu Lys Asp
100 105 110
Phe Phe Leu Ser Asp Lys His Lys Cys Ile Met Thr Ser Pro Ser Leu
115 120 125
Cys Leu Val Cys Glu Met Ser Ser Leu Phe His Ala Met Tyr Ser Gly
130 135 140
Ser Arg Thr Pro His Ile Pro Tyr Lys Leu Leu His Leu Ile Trp Ile
145 150 155 160
His Ala Glu His Leu Ala Gly Tyr Arg Gln Gln Asp Ala His Glu Phe
165 170 175
Leu Ile Ala Ile Leu Asp Val Leu His Arg His Ser Lys Asp Asp Ser
180 185 190
Gly Gly Gln Glu Ala Asn Asn Pro Asn Cys Cys Asn Cys Ile Ile Asp
195 200 205
Gln Ile Phe Thr Gly Gly Leu Gln Ser Asp Val Thr Cys Gln Ala Cys
210 215 220
His Ser Val Ser Thr Thr Ile Asp Pro Cys Trp Asp Ile Ser Leu Asp
225 230 235 240
Leu Pro Gly Ser Cys Ala Thr Phe Asp Ser Gln Asn Pro Glu Arg Ala
245 250 255
Asp Ser Thr Val Ser Arg Asp Asp His Ile Pro Gly Ile Pro Ser Leu
260 265 270
Thr Asp Cys Leu Gln Trp Phe Thr Arg Pro Glu His Leu Gly Ser Ser
275 280 285
Ala Lys Ile Lys Cys Asn Ser Cys Gln Ser Tyr Gln Glu Ser Thr Lys
290 295 300
Gln Leu Thr Met Lys Lys Leu Pro Ile Val Ala Cys Phe His Leu Lys
305 310 315 320
Arg Phe Glu His Val Gly Lys Gln Arg Arg Lys Ile Asn Thr Phe Ile
325 330 335
Ser Phe Pro Leu Glu Leu Asp Met Thr Pro Phe Leu Ala Ser Thr Lys
340 345 350
Glu Ser Arg Met Lys Glu Gly Gln Pro Pro Thr Asp Cys Val Pro Asn
355 360 365
Glu Asn Lys Tyr Ser Leu Phe Ala Val Ile Asn His His Gly Thr Leu
370 375 380
Glu Ser Gly His Tyr Thr Ser Phe Ile Arg Gln Gln Lys Asp Gln Trp
385 390 395 400

Phe Ser Cys Asp Asp Ala Ile Ile Thr Lys Ala Thr Ile Glu Asp Leu
 405 410 415
 Leu Tyr Ser Glu Gly Tyr Leu Leu Phe Tyr His Lys Gln Gly Leu Glu
 420 425 430
 Lys Asp

<210> 46
 <211> 1337
 <212> DNA
 <213> Homo Sapien

<400> 46

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ccagctgctg cactgtggca	acctacgaca aggacaatca	ggcccgagacc caagccattg	180
ccgctggcac caccaccact	gccatcgaa cctctaccac	ctgcccgtct aaccagatgg	240
tcaacaataa tgagaataca	ggctctctaa gtccatcaag	tgggtgggc agccctgtgt	300
cagggacccc caagcagcta	gccagcatca aaataatcta	ccccaatgac ttggcaaaga	360
agatgaccaa atgcagcaag	agtccacctgc cgagtcaggg	ccctgtcatc attgactgca	420
ggcccttcat ggagtacaac	aagagtccaca tccaaggagc	tgtccacatt aactgtgccg	480
ataagatcg cccgcggaga	ctgcagcagg gcaagatcac	tgtcctagac ttgattcct	540
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agaataccaa tgagccaagc	cgagtgtatgc cctcccgacc	acttcacata gtcctcgagt	660
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<210> 47
 <211> 444
 <212> PRT
 <213> Homo Sapien

<400> 47

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Leu Asn Cys Gly Cys Ser Ser Ala Ser Cys Cys Thr Val Ala Thr Tyr			
35 40 45			
Asp Lys Asp Asn Gln Ala Gln Thr Gln Ala Ile Ala Ala Gly Thr Thr			
50 55 60			
Thr Thr Ala Ile Gly Thr Ser Thr Thr Cys Pro Ala Asn Gln Met Val			
65 70 75 80			
Asn Asn Asn Glu Asn Thr Gly Ser Leu Ser Pro Ser Ser Gly Val Gly			
85 90 95			

Ser Pro Val Ser Gly Thr Pro Lys Gln Leu Ala Ser Ile Lys Ile Ile
 100 105 110
 Tyr Pro Asn Asp Leu Ala Lys Lys Met Thr Lys Cys Ser Lys Ser His
 115 120 125
 Leu Pro Ser Gln Gly Pro Val Ile Ile Asp Cys Arg Pro Phe Met Glu
 130 135 140
 Tyr Asn Lys Ser His Ile Gln Gly Ala Val His Ile Asn Cys Ala Asp
 145 150 155 160
 Lys Ile Ser Arg Arg Leu Gln Gly Lys Ile Thr Val Leu Asp
 165 170 175
 Leu Ile Ser Cys Arg Glu Gly Lys Asp Ser Phe Lys Arg Ile Phe Ser
 180 185 190
 Lys Glu Ile Ile Val Tyr Asp Glu Asn Thr Asn Glu Pro Ser Arg Val
 195 200 205
 Met Pro Ser Gln Pro Leu His Ile Val Leu Glu Ser Leu Lys Arg Glu
 210 215 220
 Gly Lys Glu Pro Leu Val Leu Lys Gly Gly Leu Ser Ser Phe Lys Gln
 225 230 235 240
 Asn His Glu Asn Leu Cys Asp Asn Ser Leu Gln Leu Gln Glu Cys Arg
 245 250 255
 Glu Val Gly Gly Ala Ser Ala Ala Ser Ser Leu Leu Pro Gln Pro
 260 265 270
 Ile Pro Thr Thr Pro Asp Ile Glu Asn Ala Glu Leu Thr Pro Ile Leu
 275 280 285
 Pro Phe Leu Phe Leu Gly Asn Glu Gln Asp Ala Gln Asp Leu Asp Thr
 290 295 300
 Met Gln Arg Leu Asn Ile Gly Tyr Val Ile Asn Val Thr Thr His Leu
 305 310 315 320
 Pro Leu Tyr His Tyr Glu Lys Gly Leu Phe Asn Tyr Lys Arg Leu Pro
 325 330 335
 Ala Thr Asp Ser Asn Lys Gln Asn Leu Arg Gln Tyr Phe Glu Glu Ala
 340 345 350
 Phe Glu Phe Ile Glu Glu Ala His Gln Cys Gly Lys Gly Leu Leu Ile
 355 360 365
 His Cys Gln Ala Gly Val Ser Arg Ser Ala Thr Ile Val Ile Ala Tyr
 370 375 380
 Leu Met Lys His Thr Arg Met Thr Met Thr Asp Ala Tyr Lys Phe Val
 385 390 395 400
 Lys Gly Lys Arg Pro Ile Ile Ser Pro Asn Leu Asn Phe Met Gly Gln
 405 410 415
 Leu Leu Glu Phe Glu Glu Asp Leu Asn Asn Gly Val Thr Pro Arg Ile
 420 425 430
 Leu Thr Pro Lys Leu Met Gly Val Glu Thr Val Val
 435 440

<210> 48
 <211> 3378
 <212> DNA
 <213> Homo Sapien

<400> 48
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 agccctggcc gtgaccttcc accattttagatgagtcgg aggggctcctt aggacacagag 180
 gggcccttgg aggaagaaga ggtatggagag gagtcatttggatggcat ggaaaggac 240

taccgcgcca	tcccagagct	ggacgcctat	gaggccgagg	gactggctct	ggatgatgag	300
gacgttagagg	agctgacggc	cagtcagagg	gaggcagcag	agcgggccat	gcggcagcgt	360
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gctgagttca	ggatgc	gtgtgg	tttgc	tttgc	tttgc	3060
gagctgc	ccttggc	tgagttgc	attcagg	ctttgc	ctttggcc	3120
agagctgg	tttgc	tttgc	tttgc	tttgc	tttgc	3180
ggtggaa	ggc	ggc	ggc	ggc	ggc	3240
gatgtgagtc	atgcgg	atgcgg	atgcgg	atgcgg	atgcgg	3300
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agttgaataa	aatataaa					3378

<211> 904
<212> PRT
<213> Homo Sapien

<400> 49

Leu Gln Glu Ser Ser Glu Ser Phe Thr Met Ala Ser Ser Pro Ala Gln
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Arg Arg Thr Asp Ala Leu Thr Ser Ser Pro Gly Arg Asp Leu Pro Pro
35 40 45
Phe Glu Asp Glu Ser Glu Gly Leu Leu Gly Thr Glu Gly Pro Leu Glu
50 55 60
Glu Glu Glu Asp Gly Glu Glu Leu Ile Gly Asp Gly Met Glu Arg Asp
65 70 75 80
Tyr Arg Ala Ile Pro Glu Leu Asp Ala Tyr Glu Ala Glu Gly Leu Ala
85 90 95
Leu Asp Asp Glu Asp Val Glu Glu Leu Thr Ala Ser Gln Arg Glu Ala
100 105 110
Ala Glu Arg Ala Met Arg Gln Arg Asp Arg Glu Ala Gly Arg Gly Leu
115 120 125
Gly Arg Met Arg Arg Gly Leu Leu Tyr Asp Ser Asp Glu Glu Asp Glu
130 135 140
Glu Arg Pro Ala Arg Lys Arg Arg Gln Val Glu Arg Ala Thr Glu Asp
145 150 155 160
Gly Glu Glu Asp Glu Glu Met Ile Glu Ser Ile Glu Asn Leu Glu Asp
165 170 175
Leu Lys Gly His Ser Val Arg Glu Trp Val Ser Met Ala Gly Pro Arg
180 185 190
Leu Glu Ile His His Arg Phe Lys Asn Phe Leu Arg Thr His Val Asp
195 200 205
Ser His Gly His Asn Val Phe Lys Glu Arg Ile Ser Asp Met Cys Lys
210 215 220
Glu Asn Arg Glu Ser Leu Val Val Asn Tyr Glu Asp Leu Ala Ala Arg
225 230 235 240
Glu His Val Leu Ala Tyr Phe Leu Pro Glu Ala Pro Ala Glu Leu Leu
245 250 255
Gln Ile Phe Asp Glu Ala Ala Leu Glu Val Val Leu Ala Met Tyr Pro
260 265 270
Lys Tyr Asp Arg Ile Thr Asn His Ile His Val Arg Ile Ser His Leu
275 280 285
Pro Leu Val Glu Glu Leu Arg Ser Leu Arg Gln Leu His Leu Asn Gln
290 295 300
Leu Ile Arg Thr Ser Gly Val Val Thr Ser Cys Thr Gly Val Leu Pro
305 310 315 320
Gln Leu Ser Met Val Lys Tyr Asn Cys Asn Lys Cys Asn Phe Val Leu
325 330 335
Gly Pro Phe Cys Gln Ser Gln Asn Gln Glu Val Lys Pro Gly Ser Cys
340 345 350
Pro Glu Cys Gln Ser Ala Gly Pro Phe Glu Val Asn Met Glu Glu Thr
355 360 365
Ile Tyr Gln Asn Tyr Gln Arg Ile Arg Ile Gln Glu Ser Pro Gly Lys
370 375 380
Val Ala Ala Gly Arg Leu Pro Arg Ser Lys Asp Ala Ile Leu Leu Ala
385 390 395 400

Asp Leu Val Asp Ser Cys Lys Pro Gly Asp Glu Ile Glu Leu Thr Gly
 405 410 415
 Ile Tyr His Asn Asn Tyr Asp Gly Ser Leu Asn Thr Ala Asn Gly Phe
 420 425 430
 Pro Val Phe Ala Thr Val Ile Leu Ala Asn His Val Ala Lys Lys Asp
 435 440 445
 Asn Lys Val Ala Val Gly Glu Leu Thr Asp Glu Asp Val Lys Met Ile
 450 455 460
 Thr Ser Leu Ser Lys Asp Gln Gln Ile Gly Glu Lys Ile Phe Ala Ser
 465 470 475 480
 Ile Ala Pro Ser Ile Tyr Gly His Glu Asp Ile Lys Arg Gly Leu Ala
 485 490 495
 Leu Ala Leu Phe Gly Gly Glu Pro Lys Asn Pro Gly Gly Lys His Lys
 500 505 510
 Val Arg Gly Asp Ile Asn Val Leu Leu Cys Gly Asp Pro Gly Thr Ala
 515 520 525
 Lys Ser Gln Phe Leu Lys Tyr Ile Glu Lys Val Ser Ser Arg Ala Ile
 530 535 540
 Phe Thr Thr Gly Gln Gly Ala Ser Ala Val Gly Leu Thr Ala Tyr Val
 545 550 555 560
 Gln Arg His Pro Val Ser Arg Glu Trp Thr Leu Glu Ala Gly Ala Leu
 565 570 575
 Val Leu Ala Asp Arg Gly Val Cys Leu Ile Asp Glu Phe Asp Lys Met
 580 585 590
 Asn Asp Gln Asp Arg Thr Ser Ile His Glu Ala Met Glu Gln Gln Ser
 595 600 605
 Ile Ser Ile Ser Lys Ala Gly Ile Val Thr Ser Leu Gln Ala Arg Cys
 610 615 620
 Thr Val Ile Ala Ala Ala Asn Pro Ile Gly Gly Arg Tyr Asp Pro Ser
 625 630 635 640
 Leu Thr Phe Ser Glu Asn Val Asp Leu Thr Glu Pro Ile Ile Ser Arg
 645 650 655
 Phe Asp Ile Leu Cys Val Val Arg Asp Thr Val Asp Pro Val Gln Asp
 660 665 670
 Glu Met Leu Ala Arg Phe Val Val Gly Ser His Val Arg His His Pro
 675 680 685
 Ser Asn Lys Glu Glu Glu Gly Leu Ala Asn Gly Ser Ala Ala Glu Pro
 690 695 700
 Ala Met Pro Asn Thr Tyr Gly Val Glu Pro Leu Pro Gln Glu Val Leu
 705 710 715 720
 Lys Lys Tyr Ile Ile Tyr Ala Lys Glu Arg Val His Pro Lys Leu Asn
 725 730 735
 Gln Met Asp Gln Asp Lys Val Ala Lys Met Tyr Ser Asp Leu Arg Lys
 740 745 750
 Glu Ser Met Ala Thr Gly Ser Ile Pro Ile Thr Val Arg His Ile Glu
 755 760 765
 Ser Met Ile Arg Met Ala Glu Ala His Ala Arg Ile His Leu Arg Asp
 770 775 780
 Tyr Val Ile Glu Asp Asp Val Asn Met Ala Ile Arg Val Met Leu Glu
 785 790 795 800
 Ser Phe Ile Asp Thr Gln Lys Phe Ser Val Met Arg Ser Met Arg Lys
 805 810 815
 Thr Phe Ala Arg Tyr Leu Ser Phe Arg Arg Asp Asn Asn Glu Leu Leu
 820 825 830
 Leu Phe Ile Leu Lys Gln Leu Val Ala Glu Gln Val Thr Tyr Gln Arg

835	840	845
Asn Arg Phe Gly Ala Gln Gln Asp Thr Ile Glu Val Pro Glu Lys Asp		
850	855	860
Leu Val Asp Lys Ala Arg Gln Ile Asn Ile His Asn Leu Ser Ala Phe		
865	870	875
Tyr Asp Ser Glu Leu Phe Arg Met Asn Lys Phe Ser His Asp Leu Lys		880
885	890	895
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900		

<210> 50

<211> 2815

<212> DNA

<213> Homo Sapien

<400> 50

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aatcaacaag gaactggcca acatccgctc caagttcaaa ggagacaaag cttggatgg	180
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catgtgcctg gcccgtcaact gcatcgccaa cgtgggcagc cgggagatgg gcgaggccct	360
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<210> 51

<211> 937

<212> PRT

<213> Homo Sapien

<400> 51

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Ser	Lys	Glu	Ala	Glu	Ile	Lys	Arg	Ile	Asn	Lys	Glu	Leu	Ala	Asn	Ile
									35				40		45
Arg	Ser	Lys	Phe	Lys	Gly	Asp	Lys	Ala	Leu	Asp	Gly	Tyr	Ser	Lys	Lys
									50				55		60
Lys	Tyr	Gly	Tyr	Leu	Phe	Ile	Ser	Val	Leu	Val	Asn	Ser	Asn	Ser	Glu
									65				70		80
Leu	Ile	Arg	Leu	Ile	Asn	Asn	Ala	Ile	Lys	Asn	Asp	Leu	Ala	Ser	Arg
									85				90		95
Asn	Pro	Thr	Phe	Met	Cys	Leu	Ala	Leu	His	Cys	Ile	Ala	Asn	Val	Gly
									100				105		110
Ser	Arg	Glu	Met	Gly	Glu	Ala	Phe	Ala	Ala	Asp	Ile	Pro	Arg	Ile	Leu
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Val	Ala	Gly	Asp	Ser	Met	Asp	Ser	Val	Lys	Gln	Ser	Ala	Ala	Leu	Cys
									130				135		140
Leu	Leu	Arg	Leu	Tyr	Lys	Ala	Ser	Pro	Asp	Leu	Val	Pro	Met	Gly	Glu
									145				150		160
Trp	Thr	Ala	Arg	Val	Val	His	Leu	Leu	Asn	Asp	Gln	His	Met	Gly	Val
									165				170		175
Val	Thr	Ala	Ala	Val	Ser	Leu	Ile	Thr	Cys	Leu	Cys	Lys	Lys	Asn	Pro
									180				185		190
Asp	Asp	Phe	Lys	Thr	Cys	Val	Ser	Leu	Ala	Val	Ser	Arg	Leu	Ser	Arg
									195				200		205
Ile	Val	Ser	Ser	Ala	Ser	Thr	Asp	Leu	Gln	Asp	Tyr	Thr	Tyr	Tyr	Phe
									210				215		220
Val	Pro	Ala	Pro	Trp	Leu	Ser	Val	Lys	Leu	Leu	Arg	Leu	Leu	Gln	Cys
									225				230		235
Tyr	Pro	Pro	Pro	Glu	Asp	Ala	Ala	Val	Lys	Gly	Arg	Leu	Val	Glu	Cys
									245				250		255
Leu	Glu	Thr	Val	Leu	Asn	Lys	Ala	Gln	Glu	Pro	Pro	Lys	Ser	Lys	Lys
									260				265		270
Val	Gln	His	Ser	Asn	Ala	Lys	Asn	Ala	Ile	Leu	Phe	Glu	Thr	Ile	Ser
									275				280		285
Leu	Ile	Ile	His	Tyr	Asp	Ser	Glu	Pro	Asn	Leu	Leu	Val	Arg	Ala	Cys
									290				295		300
Asn	Gln	Leu	Gly	Gln	Phe	Leu	Gln	His	Arg	Glu	Thr	Asn	Leu	Arg	Tyr
									305				310		320

Leu Ala Leu Glu Ser Met Cys Thr Leu Ala Ser Ser Glu Phe Ser His
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 Glu Ala Val Lys Thr His Ile Asp Thr Val Ile Asn Ala Leu Lys Thr
 340 345 350
 Glu Arg Asp Val Ser Val Arg Gln Arg Ala Ala Asp Leu Leu Tyr Ala
 355 360 365
 Met Cys Asp Arg Ser Asn Ala Lys Gln Ile Val Ser Glu Met Leu Arg
 370 375 380
 Tyr Leu Glu Thr Ala Asp Tyr Ala Ile Arg Glu Glu Ile Val Leu Lys
 385 390 395 400
 Val Ala Ile Leu Ala Glu Lys Tyr Ala Val Asp Tyr Ser Trp Tyr Val
 405 410 415
 Asp Thr Ile Leu Asn Leu Ile Arg Ile Ala Gly Asp Tyr Val Ser Glu
 420 425 430
 Glu Val Trp Tyr Arg Val Leu Gln Ile Val Thr Asn Arg Asp Asp Val
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 Gln Gly Tyr Ala Ala Lys Thr Val Phe Glu Ala Leu Gln Ala Pro Ala
 450 455 460
 Cys His Glu Asn Met Val Lys Val Gly Gly Tyr Ile Leu Gly Glu Phe
 465 470 475 480
 Gly Asn Leu Ile Ala Gly Asp Pro Arg Ser Ser Val Ala Thr Arg Ala
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 Leu Leu Leu Ser Thr Tyr Ile Lys Phe Ile Asn Leu Phe Pro Glu Thr
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 Lys Ala Thr Ile Gln Gly Val Leu Arg Ala Gly Ser Gln Leu Arg Asn
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 Ala Asp Val Glu Leu Gln Gln Arg Ala Val Glu Tyr Leu Thr Leu Ser
 530 535 540
 Ser Val Ala Ser Thr Asp Val Leu Ala Thr Val Leu Glu Glu Met Pro
 545 550 555 560
 Pro Phe Pro Glu Arg Glu Ser Ser Ile Leu Ala Lys Leu Lys Arg Lys
 565 570 575
 Lys Gly Pro Gly Ala Gly Ser Ala Leu Asp Asp Gly Arg Arg Asp Pro
 580 585 590
 Ser Ser Asn Asp Ile Asn Gly Gly Met Glu Pro Thr Pro Ser Thr Val
 595 600 605
 Ser Thr Pro Ser Pro Ser Ala Asp Leu Leu Gly Leu Arg Ala Ala Pro
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 Pro Pro Ala Ala Pro Pro Ala Ser Ala Gly Ala Gly Asn Leu Leu Val
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 Asp Val Phe Asp Gly Pro Ala Ala Gln Pro Ser Leu Gly Pro Thr Pro
 645 650 655
 Glu Glu Ala Phe Leu Ser Pro Gly Pro Glu Asp Ile Gly Pro Pro Ile
 660 665 670
 Pro Glu Ala Asp Glu Leu Leu Asn Lys Phe Val Cys Lys Asn Asn Gly
 675 680 685
 Val Leu Phe Glu Asn Gln Leu Leu Gln Ile Gly Val Lys Ser Glu Phe
 690 695 700
 Arg Gln Asn Leu Gly Arg Met Tyr Leu Phe Tyr Gly Asn Lys Thr Ser
 705 710 715 720
 Val Gln Phe Gln Asn Phe Ser Pro Thr Val Val His Pro Gly Asp Leu
 725 730 735
 Gln Thr His Ile Leu Ser Gly Pro Ala Gln Pro Pro Ala Ser Pro Arg
 740 745 750
 Arg Pro Ser Ser Pro Trp Gly Ser Arg Leu Thr Gln Leu Ala Val Gln

755	760	765	
Thr Lys Arg Val Ala Ala Gln Val Asp Gly Gly Ala Gln Val Gln Gln			
770	775	780	
Val Leu Asn Ile Glu Cys Leu Arg Asp Phe Leu Thr Pro Pro Leu Leu			
785	790	795	800
Ser Val Arg Phe Arg Tyr Gly Gly Ala Pro Gln Ala Leu Thr Leu Lys			
805	810	815	
Leu Pro Val Thr Ile Asn Lys Phe Phe Gln Pro Thr Glu Met Ala Ala			
820	825	830	
Gln Asp Phe Phe Gln Arg Trp Lys Gln Leu Ser Leu Pro Gln Gln Glu			
835	840	845	
Ala Gln Lys Ile Phe Lys Ala Asn His Pro Met Asp Ala Glu Val Thr			
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Lys Ala Lys Leu Leu Gly Phe Gly Ser Ala Leu Leu Asp Asn Val Asp			
865	870	875	880
Pro Asn Pro Glu Asn Phe Val Gly Ala Gly Ile Ile Gln Thr Lys Ala			
885	890	895	
Leu Gln Val Gly Cys Leu Leu Arg Leu Glu Pro Asn Ala Gln Ala Gln			
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<210> 52

<211> 3313

<212> DNA

<213> Homo sapiens

<400> 52

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<210> 53
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 <212> PRT
 <213> Homo sapiens

<400> 53
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 35 40 45
 Pro Ala Gly Ser Thr Lys Pro Phe Val His Ala Val Pro Pro Ser Asp
 50 55 60
 Pro Leu Arg Gln Ala Asn Arg Leu Pro Ile Lys Val Leu Lys Met Leu
 65 70 75 80
 Thr Ala Arg Thr Gly His Ile Leu His Pro Glu Tyr Leu Gln Pro Leu
 85 90 95
 Pro Ser Thr Pro Val Ser Pro Ile Glu Leu Asp Ala Lys Lys Ser Pro
 100 105 110
 Leu Ala Leu Leu Ala Gln Thr Cys Ser Gln Ile Gly Lys Pro Asp Pro
 115 120 125
 Ser Pro Ser Ser Lys Leu Ser Ser Val Ala Ser Asn Gly Gly Ala

130	135	140													
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Pro	Leu	Lys	Leu	Ser	Asp	Ile	Gly	Val	Glu	Asp	Lys	Ser	Ser	Phe	Lys
					165				170					175	
Pro	Tyr	Ser	Lys	Pro	Gly	Ser	Asp	Lys	Lys	Glu	Pro	Gly	Gly	Gly	Gly
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Gly	Val	Ser	Ser	Glu											
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Lys	Ser	Gly	Phe	Arg	Val	Pro	Ser	Ala	Thr	Cys	Gln	Pro	Phe	Thr	Pro
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Arg	Thr	Gly	Ser	Pro	Ser	Ser	Ser	Ala	Ser	Ala	Cys	Ser	Pro	Gly	Gly
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240															
Met	Leu	Ser	Ser	Ala	Gly	Gly	Gly	Ala	Pro	Glu	Gly	Lys	Asp	Asp	Lys
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Asp	Thr	Asp	Val	Gly	Gly	Gly	Gly	Lys	Gly	Thr	Gly	Gly	Ala	Ser	Ala
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Glu	Gly	Gly	Pro	Thr	Gly	Leu	Ala	His	Gly	Arg	Ile	Ser	Cys	Gly	Gly
					275				280					285	
Gly	Ile	Asn	Val	Asp	Val	Asn	Gln	His	Pro	Asp	Gly	Gly	Pro	Gly	Gly
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Lys	Ala	Leu	Gly	Ser	Asp	Cys	Gly	Gly	Ser	Ser	Gly	Ser	Ser	Ser	Gly
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Ser	Gly	Pro	Ser	Ala	Pro	Thr	Ser	Ser	Ser	Val	Leu	Gly	Ser	Gly	Leu
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Val	Ala	Pro	Val	Ser	Pro	Tyr	Lys	Pro	Gly	Gln	Thr	Val	Phe	Pro	Leu
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Pro	Pro	Ala	Gly	Met	Thr	Tyr	Pro	Gly	Ser	Leu	Ala	Gly	Ala	Tyr	Ala
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Gly	Tyr	Pro	Pro	Gln	Phe	Leu	Pro	His	Gly	Val	Ala	Leu	Asp	Pro	Thr
					370				375					380	
Lys	Pro	Gly	Ser	Leu	Val	Gly	Ala	Gln	Leu	Ala	Ala	Ala	Ala	Ala	Gly
					385				390					395	
															400
Ser	Leu	Gly	Cys	Ser	Lys	Pro	Ala	Gly	Ser	Ser	Pro	Leu	Ala	Gly	Ala
					405					410					415
Ser	Pro	Pro	Ser	Val	Met	Thr	Ala	Ser	Leu	Cys	Arg	Asp	Pro	Tyr	Cys
					420				425					430	
Leu	Ser	Tyr	His	Cys	Ala	Ser	His	Leu	Ala	Gly	Ala	Ala	Ala	Ala	Ser
					435				440					445	
Ala	Ser	Cys	Ala	His	Asp	Pro	Ala	Ala	Ala	Ala	Ala	Ala	Leu	Lys	Ser
					450				455					460	
Gly	Tyr	Pro	Leu	Val	Tyr	Pro	Thr	His	Pro	Leu	His	Gly	Val	His	Ser
					465				470					475	
															480
Ser	Leu	Thr	Ala	Ala	Ala	Ala	Gly	Ala	Thr	Pro	Pro	Ser	Leu	Ala	
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Gly	His	Pro	Leu	Tyr	Pro	Tyr	Gly	Phe	Met	Leu	Pro	Asn	Asp	Pro	Leu
					500				505					510	
Pro	His	Ile	Cys	Asn	Trp	Val	Ser	Ala	Asn	Gly	Pro	Cys	Asp	Lys	Arg
					515				520					525	
Phe	Ala	Thr	Ser	Glu	Glu	Leu	Leu	Ser	His	Leu	Arg	Thr	His	Thr	Ala
					530				535					540	
Phe	Pro	Gly	Thr	Asp	Lys	Leu	Leu	Ser	Gly	Tyr	Pro	Ser	Ser	Ser	Ser
					545				550					555	
															560
Leu	Ala	Ser	Ala	Ala	Ala	Ala	Ala	Ala	Met	Ala	Cys	His	Met	His	Ile
					565				570					575	

Thr Ser Gly Ala Pro Gly Ser Pro Gly Thr Leu Ala Leu Arg Ser Pro
580 585 590
His His Ala Leu Gly Leu Ser Ser Arg Tyr His Pro Tyr Ser Lys Ser
595 600 605
Pro Leu Pro Thr Pro Gly Ala Pro Val Pro Val Pro Ala Ala Thr Gly
610 615 620
Pro Tyr Tyr Ser Pro Tyr Ala Leu Tyr Gly Gln Arg Leu Thr Thr Ala
625 630 635 640
Ser Ala Leu Gly Tyr Gln
645